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JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

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THE SIXTY-SEVENTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN NEW YORK CITY, DATE TO BE NAMED.

The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy will also meet in New York City in 1919.

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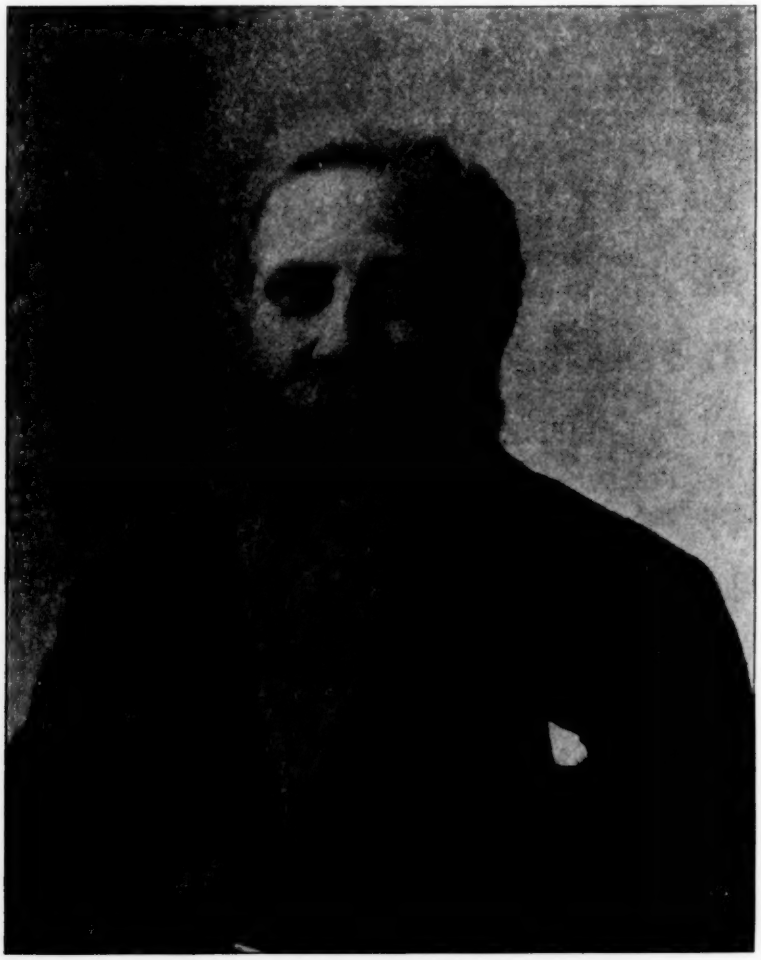
ALBERT ETHELBERT EBERT, PH.D.

CHICAGO, ILL.

1840–1906

President of the American Pharmaceutical Association, 1872–1873



ALBERT E. EBERT

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. VII SEPTEMBER, 1918 NO. 9

ALBERT ETHELBERT EBERT.

The meeting of the American Pharmaceutical Association in Chicago brought back to memory the lives of those who sojourned here and labored for pharmacy and the Association in the earlier years of its history. An interesting lecture on "Ebert, Oldberg and Hallberg" was delivered by Dr. H. M. Whelpley before the Historical Section in which he spoke of the characteristics of these pharmacists as they had impressed him during the many years of his association with them. The historical exhibit on this occasion was largely concerned with Mr. Ebert whose life is closely linked to the Association through his active participation in its affairs and his legacies. No attempt will be made to present a sketch of the deceased but only brief references to a few of his activities.

Mr. Ebert joined the American Pharmaceutical Association in 1864, was its third vice-president in 1868–1869; and president in 1872–1873. He was one of the delegates to the International Pharmaceutical Conference held at Paris in 1867 and to the British Pharmaceutical Conference the same year. He was a charter member of the Chicago Veteran Druggists' Association; a member of the Revision Committee of the U. S. Pharmacopoeia in 1870, vice-president of the Convention in 1900 and member of the board of trustees. He became connected with the Chicago College of Pharmacy in 1868 and was for a number of years professor of pharmacy in this institution. He graduated from the Philadelphia College of Pharmacy in 1864 and later received the honorary degree of master of pharmacy. In 1868 he received the degree of doctor of philosophy in the University of Munich.

By his will, most of the property he was possessed of was given to the American Pharmaceutical Association and this legacy, according to the last report of the treasurer, amounts to $4,324.47. The Ebert Prize Fund was established by the deceased in 1873 and now has a value of $1,133.27.

The last words spoken by Mr. Ebert were: "The American Pharmaceutical Association, it was my life; it gave me a profession."

Every man at time of Death,
Would fain set forth some saying that may live
After his death and better humankind;
For death gives life's last word a power to live,
And, like the stone-cut epitaph, remain
After the vanished voice, and speak to men.

—*Tennyson.*

EDITORIAL

E. G. EBERLE, Editor 253 Bourse Bldg., PHILADELPHIA

THE SIXTY-SIXTH ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

THE valuable results of a convention are estimated from its accomplishments or the progress made in its laudable endeavors. The attendance at the Chicago meeting of the American Pharmaceutical Association was not as large as it would have been in normal times, but the registration records were very satisfactory and beyond the expectations of officials prior to convention dates. The accession of membership exceeded that of last report; 410 names were added during the year.

Throughout the proceedings the purpose to advance the opportunities of pharmacy was evident, and this determination found expression in the transactions of the affiliated bodies, of the Sections, the House of Delegates and the General Sessions of the Association.

Federation of the Drug Industries did not become an accomplished fact, but the movement has progressed by the expansion of the National Drug Trade Conference through the inclusion of delegates from the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties. Another step toward federation was taken by enlarging the functions of the House of Delegates of the A. Ph. A. and admitting representatives of State Pharmaceutical Associations to participate in its deliberations and promotions. Quoting from the report of the Federation Committee: "The National Drug Trade Conference and the House of Delegates will be as two piers of a great bridge, and when, as the years go on, there is completed between the two a connecting span in the shape of service features, so vitally needed in American Pharmacy, the federation will then be a realized dream."

The conclusions reached by the majority in attendance were that if a Pharmaceutical Corps is established in the U. S. Army only properly qualified pharmacists will be commissioned in that department. It was also recognized as essential that Congress and the public must be convinced of the significance of pharmaceutical service. In the present crisis coöperation with the Government in conservation is of paramount importance, and both the desire and ability to be helpful were clearly indicated in a number of the papers presented.

As a part of the program of the Scientific Section, Dr. H. H. Rusby delivered a lecture, illustrated by lantern slides, on "The Recognition at Sight of Poisonous and Medicinal Properties in Unknown Plants;" a series of papers dealt with the effect of the war on drug supplies, the manufacturing pharmacists, chemists, re-

tail pharmacists, etc., while others related to the development of materia medica. Instructive discussion in the Section on Practical Pharmacy and Dispensing added value to contributions on the conservation of alcohol, sugar and glycerin, all important items of the conservation list. In the Section on Commercial Interests, following the reading of a paper by Dr. A. R. L. Dohme, action was taken to provide for a Conservation Committee to which the Association signified its approval. Related work is now also engaging the Committee on Revision of the United States Pharmacopoeia and that of the National Formulary, all of which should convince the Surgeon General, the Medical Department of the Army, and Congress, that pharmacists have contributed, can, do and are willing to render service of the highest importance to the Medical Department, and that they are entitled to better recognition than has so far been accorded to them. The remarks made before the Association by Colonel Henry Raymond, representing the Medical Department of the U. S. Army, emphasized the necessity of furnishing convincing proof that pharmacists are in a position and qualified to render an indispensable service to the Medical Department,—he admitted that in the Army rank made greater efficiency and authority possible. It required no stretch of imagination to deduce that technicians and professional men should serve in the capacity for which they are qualified by training and education and should be given commissions commensurate with the service. Without unveiling his thoughts he commended the dentists for their past activities, and referred to their signal success in having a dental corps made part of the Medical Department of the U. S. Army.

The report of the Committee on the Status of Pharmacists in the Government service, printed in this issue of the JOURNAL, is of particular interest. The recommendations of F. H. Freericks, presented in a paper, that provisions be made now for looking after the welfare of pharmacists when they return from service abroad, received the hearty endorsement of the Association.

Provisions were made for a committee to devise ways and means for the creation of a loan fund for distressed pharmacists in the war zone.

Another subject—and this will be the final consideration of this writing—was presented in several papers and addresses, and related to the separation of pharmacies and drug stores. A committee was appointed to study the proposition, not only from the standpoint of practicability but of necessary legislation and applicable school curricula for both divisions. The thought is not new, and such distinction obtains in some European countries. It may not be altogether impracticable to make a division of this kind at this time, but as the convenience of the public enters into the move along with the inclinations of druggists and pharmacists considerable time will elapse before workable plans are stabilitated for the decided changes that are involved. The general expressions on the

subject, however, indicate that there are some who would pursue exclusively the practice of pharmacy if those who are most interested in merchandizing would be willing to discontinue the pharmaceutical departments of their stores, and there are, doubtless, many druggists who would welcome the opportunity.

There was about a balance of arguments, pro and con, relative to the practicability of the proposition. The majority admitted that if it was possible to effect such a change pharmacy would acquire its professional standing and the druggists would attain a higher degree of proficiency and more general success in the business world. In other words, it was acknowledged that there was a degree of incompatibility under present conditions which interfered with the development of both pharmacy and the drug business.

The suggestion was made that because of the present status of the drug business recognition was not forthcoming to pharmacy by the establishment of a pharmaceutical corps in the U. S. Army. On this question the consensus of opinion was that there were many qualified American pharmacists, that their work conclusively proved this, and there was no expectancy of commissioned rank except for those pharmacists who could meet the requirements proposed in the Edmonds Bill.

Cicero said, "Certain signs precede certain events;" someone else has paraphrased this: "Great events have sent before them their announcements."

E. G. E.

PHARMACY IS AN "ESSENTIAL SPECIALTY" OF ARMY MEDICAL PRACTICE.

LET us be frank. The "lion in the pathway" of securing the establishment of a Pharmaceutical Corps in the U. S. Army is Surgeon General Gorgas, who has consistently and persistently opposed the movement for the establishment of the corps, the crux of his objection being that the practice of pharmacy in the Army is a non-essential specialty. (See Memorandum of War Department, February 13, 1918.)

There is, of course, a ready and complete answer to this. If pharmacy, which is a branch of therapeutics, is essential in civil life, it is equally essential in Army life. If the 150,000 physicians of the country require 50,000 retail pharmacists for civil medical practice, as they do, and if it is necessary for the 48 States of the Union to have pharmacy laws for the protection of the public against the serious dangers of incompetency in the compounding of drugs and poisons, as they have —surely the men of the Army deserve as skilled pharmaceutical service as they received at home, and this they do not get. There is no commissioned rank for pharmacists in the Army and no adequate pharmaceutical service.

We believe that the Surgeon General stands practically alone in his attitude. The American Medical Association, which stands for the medical profession of this country, has earnestly and enthusiastically urged the commissioning of pharmacists in the Army because "it would be but simple justice to the pharmacists themselves, because the usefulness of the Medical Corps will be greatly augmented, and lastly, and most important, because the efficiency of the Army demands it." And we are confident that if the matter of establishing a Pharmaceutical Corps in the Army was referred by vote to the men in the field there would not be the slightest doubt of its establishment.

The pharmacists of this country have repeatedly approached the Surgeon General on the subject of a Pharmaceutical Corps for the Army, but he is apparently adamant in his opposition. Why? "Is it because he is preëminently a sanitarian and not a therapeutist, and is more sympathetic to preventive medicine (of which sanitation is a branch) than to curative medicine (of which therapeutics and pharmacy are branches), as his establishment of a Sanitary Corps in the Army, while opposing the establishment of a Pharmaceutical Corps, might imply?" "Or is it"—and we believe this—"because he does not know and can not visualize the possibilities of an adequate and properly systematized pharmaceutical service in the Army?"

Possibly, also, he fears that if a Pharmaceutical Corps were established the Medical Department would be swamped by a large number of inadequately trained pharmacists when only a relatively small number of highly trained men would be needed.

But these objections are minor. The big, vital question is: "*Are trained pharmacists essential for the better protection of the health and lives of the men in the service?*" and there can be no doubt on this question in the light of the experience of our allied armies abroad with their pharmaceutical corps and the wonderful work the latter have done.

We believe that Surgeon General Gorgas—for whom we have the highest respect as a scientist and as a man—is honest and sincere in his opposition to a Pharmaceutical Corps, but he has been ill-advised, *looking towards the future needs of the Army.* The pharmacists of this country do not want a Pharmaceutical Corps *as pharmacists,* but as American citizens, and because they know that American Pharmacy can be made most helpful to the Medical Department.

The Military Surgeon (August 1918, 207) estimates editorially that there are 115,500 physicians in the United States available for all purposes, being 80,000 under 50 years of age; and states that "we are probably not suffering this moment from lack of medical officers, as there are 25,000 of us, but, should volunteers fail, we soon would be in dire need of them to supply our rapidly increasing forces." The ratio of medical men in the regular Army has been 7 to 1,000 of

military population. This war is more destructive of medical men than any previous war, and if prolonged will require 15 per 1,000. (In the British Army the ratio is now 19 per 1,000) or 75,000 for five million troops or, practically, all the active medical men of the country!

In the light of these facts it seems to us that the Surgeon General could exhibit no greater prescience than to conserve the medical forces of the country by utilizing properly trained pharmacists as medical assistants in first aid, as laboratory technicians, and in releasing medical men from non-medical duties, as well as in technical pharmaceutical work.

As Torald Sollmann (*Journal A. M. A.*, August 10, 1918) so well says, in his article on "Pharmacology in the War"—"It is the problem of the war for a country to meet and to defeat not only the human enemy, but the forces of nature. Severe necessity arises in many forms, in many new garbs. That, however, brings out one of the compensations of the war. *Necessity is the mother of invention, of conservation, of efficiency. The happy-go-lucky ways of peace no longer suffice. Every form of human endeavor is forced to the supreme effort.*"

American Pharmacy stands ready to make the supreme sacrifice, if needs be. Why ignore it?

J. W. ENGLAND.

AMENDMENT TO REGULATIONS, UNITED STATES PUBLIC HEALTH SERVICE.

No. 4.

TREASURY DEPARTMENT,
BUREAU OF THE PUBLIC HEALTH SERVICE,

Washington, July 16, 1918.

To Commissioned Officers, Acting Assistant Surgeons, Pharmacists, and Others concerned:

Paragraph 87, Regulations of the United States Public Health Service, approved March 4, 1913, as amended June 19, 1914, is hereby amended to read as follows:

Par. 87, Pharmacists, when on duty at United States marine hospitals or quarantine stations, shall, when practicable, be entitled to quarters, necessary household furniture for same, subsistence (as allowed previous to Mar. 4, 1913), fuel, light, and necessary laundry work, and when on duty at stations where there are no quarters belonging to the service, they shall be entitled to commutation therefore at the rate of $40 a month for quarters, fuel, and light, and $60 a month for subsistence and all other allowances.

RUPERT BLUE,
Surgeon General.

Approved:
L. S. ROWE,
Acting Secretary of the Treasury.

Approved
WOODROW WILSON,
The White House.

THE ANALYSIS OF LIQUID AND AROMATIC EXTRACTS OF CASCARA SAGRADA, AND THE INTRODUCTION OF A MANGANESE NUMBER FOR THE SAME.*

BY L. E. WESTMAN AND R. M. ROWAT.

Much work[1] has been carried out in connection with the examination of *Rhamnus purshiana* bark (cascara sagrada) from the viewpoint of establishing its various constituents and their chemical nature. For the analyst who is called upon to examine extracts of this drug there is no very definite data or procedure available and the relative meaning of constants obtained is not easily judged from results so far published. When it is considered that anywhere from 500 to 2,000 tons of this bark comes upon the American market annually, it would seem that more than odd partial analyses of extracts and trade preparations made from it would be of some value. Having the opportunity to work on a very large number of different samples, we have attempted to supply some general averages for constants observed from commercial samples just as they are found on the market. The most important objective was, however, to devise a means of estimating quantitatively the amount of actual cascara extractive present. Within limits this has been done by the development of a manganese number for these extracts.

Tichborne[2] reports the examination of some 29 samples of liquid extract of cascara sagrada. He found that liquid extracts of this drug when prepared according to B. P. methods yielded 24 to 25% solids. The drying and non-drying properties of these preparations were examined. The non-drying samples were found to contain glycerin, and excessive reduction with Fehling's solution was taken as an indication of adulteration of the sample. Mort and Rothe[3] reports the analysis of a single sample of cascara. The tests they make are in no respect very distinctive.

Before approaching work of this kind a comparative knowledge of the requirements of the various pharmacopoeias is essential as a constant guide. This information is outlined below for the reason that there seems to exist sufficient differences in methods of percolation to give rise to a wider range of values for certain determinations than is generally taken into account.

In the British Pharmacopoeia[4] and Codex, Cascara Sagrada is defined to be "The dried bark of *Rhamnus purshiana* D. C. and collected at least one year before being used." The official liquid preparations as defined in this edition are: (1) Liquid Extract of Cascara Sagrada containing the extract from 100 Gm. of No. 20 powder made up to 1000 Cc. with distilled water and 250 Cc. of 90% alcohol. Instructions are given to exhaust the bark with distilled water by the percolation process. This reads as follows:[1]

"Moisten the solid materials with the prescribed quantity of menstruum, set aside for four hours in a well closed vessel, pack in a percolator and add sufficient of the menstruum to saturate the materials and leave a layer of liquid above. Macerate for 24 hours. Then allow percolation to proceed slowly until the percolate measures about three-fourths of the volume required for the

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finished tincture. Press the marc, mix the expressed liquid with the percolate and add sufficient of the menstruum to produce the required volume. Clarify by subsidence or filtration if necessary."

Following this the percolate is evaporated to 600 Cc. and the alcohol, previously mixed with sufficient distilled water to produce the required volume, is added.[26] An aromatic Syrup of Cascara, containing liquid extract of cascara, tincture of orange, alcohol, cinnamon water, and syrup is also an official preparation. This syrup is a solution of sucrose and water of a Sp. Gr. of about 1.330. The B. P. Codex 1911 mentions[4] 17 extracts and compounds in which cascara may be employed. Four of these are compound tablets or pills. The rest are liquid, fluid, or aromatic extracts or mixtures. They may contain, in general, any combination of harmless aromatic oils, tinctures, licorice, glycerin, alcohol, alkalies, ammonia, or chloroform water. In order to destroy the natural bitter taste of the cascara, lime, magnesia, potassium hydroxide, ammonia, sodium and ammonium salts, and zinc oxide[8] have been used during percolation. Chloroform water is added to prevent active fermentation, while the use of alkalies follows from the incompatibility of extracts of cascara with acids or strong solutions of mineral salts.

Three official preparations are mentioned in the United States Pharmacopoeia. They are the extract[9], the fluidextract,[10] the aromatic fluidextract.[11] The fluidextract contains a gramme equivalent of the bark per Cc. as well as 250 Cc. of alcohol in every 1000 Cc. of standard extract. No. 40 powder is used and the method of percolation is as follows:[12]

"To 1000 Gm. of the dried drug add 5000 Cc. of boiling water, mix thoroughly and allow it to macerate in a covered container in a warm place for two hours. Then transfer the moist drug to a tinned or enamelled percolator and allow percolation to proceed, gradually adding boiling water until the drug is exhausted. Evaporate the percolate on a water bath to the volume specified and when cold add the alcohol directed and mix thoroughly."

The official aromatic fluidextract of cascara in U. S. P. is a product debittered by magnesium oxide and contains glycerin, licorice and alcohol along with small amounts of benzolsulphimide, methyl salicylate, oil of cinnamon, oil of anise, and oil of coriander.

In evaluating relatively a large number of preparations the following data grouped under various headings has been derived. We have divided the samples into two classes, as follows:

Class (1). Aromatic extracts of cascara sagrada and unofficial trade preparations containing licorice, glycerin and aromatics.

Class (2). Samples deemed to be genuine fluid extracts of cascara sagrada.

SPECIFIC GRAVITY.

By this determination alone a close line may be drawn between those samples which are likely to prove to be aromatic and those likely to be found to be liquid or fluid extracts of cascara. Determinations were made directly at room temperature (20° C.) by means of a set of hydrometers. Finer work than this does not yield correspondingly more valuable results. The following table[13] deals with 136 samples, which are divided into two classes as defined above:

TABLE 1.

Class (1). Range of sp. pr.	No. of samples in range.
1.000 to 1.100	5
1.100 to 1.200	22
1.200 to 1.300	9
1.300 to 1.400	1
	37
Class (2).	
Below 1.030	None
1.030 to 1.040	1
1.040 to 1.050	3
1.050 to 1.060	14
1.060 to 1.070	33
1.070 to 1.080	40
1.080 to 1.090	4
1.090 to 1.100	4
	99

Squire's Companion to the B. P.[14] gives the Sp. Gr. of liquid extracts of cascara sagrada as 1.06. It would appear from our work that a suitable range would be from 1.05 to 1.08. Working by the method quoted above for B. P. percolation, we obtained on two trials, values of 1.058 and 1.057, as the Sp. Gr. of the finished extract. By the U. S. P. method, working on the same bark we obtained 1.078 and 1.079 as the Sp. Gr. of the extract thus prepared. It is thus necessary to recognize a large range in order to include all the possibly genuine samples. Preparations below this range could, by other determinations, be shown to be diluted extracts, while samples above this range invariably contain more solids than is normally possible to extract by any official method of percolation.

No such limits of Sp. Gr. as have been prescribed for fluid extracts of cascara sagrada can be laid down for preparations of the order of class (1). The Sp. Gr. of aromatic syrups of cascara B. P. and of aromatic fluidextract of cascara sagrada U. S. P. calculated from pharmacopoeal requirements, should be 1.17 and 1.18, respectively, and in class (1) 18 samples very closely approach these figures, yet from the Sp. Gr. alone it would be rash to infer that any given sample were one or the other of these official preparations. Indeed the majority of the samples in class (1) are not official, although the greater number show Sp. Grs. which are approximately those of the official aromatic preparations.

ALCOHOL.

The alcohol content V/V of the various official liquid preparations of cascara sagrada may be readily shown by reference to the requirements of the various pharmacopoeias to be approximately as follows:

Name of extract.	Alcohol V/V %.
Fluid Extract Cascara Sagrada B. P.	22.5
Aromatic Syr. Cascara Sagrada B. P.	13.5
Fluidextract Cascara Sagrada U. S. P.	24.0
Aromatic Cascara Sagrada U. S. P.	24.0

From an inspection of the above figures, and from consideration of the alco-

hol table which follows it may be seen to what extent these requirements have been met by the samples examined.

TABLE II.

Class (1). Range of alcohol.	Samples in range.
Below 1.0%	7
1.0 to 3.0	15
3.0 to 5.0	3
5.0 to 10.0	4
10.0 to 14.0	4
14.0 to 19.0	1
19.0 to 22.0	3
	37
Class (2).	
Below 10.0%	1
10.0 to 15.0	7
15.0 to 17.0	18
17.0 to 19.0	19
19.00 to 21.0	24
21.0 to 23.0	13
23.0 to 25.0	10
25.0 to 27.0	2
27.0 to 29.0	3
29.0 to 31.0	2
	99

It is evident that only a small proportion of the samples of either class comply strictly with pharmacopoeial requirements for alcohol.

TOTAL SOLIDS (MATTER NON-VOLATILE AT 110° C.).

Total solids were determined W/V by drying 10 Cc. portions of the extracts to constant weight in platinum. In this way aromatic and near aromatic extracts may be easily distinguished from genuine liquid extracts. This is due to the presence of licorice, glycerin or sugar in the former class, substances not present in the latter. The remarkable inconstancy of aromatic extracts and trade preparations is also very clearly shown from a tabulation of the data obtained by this determination. The table covers 136 samples.

TABLE III.

Class (1). Range of total solids.	Samples in range.
15.0 to 20.0%	1
20.0 to 30.0	3
30.0 to 40.0	5
40.0 to 50.0	8
50.0 to 60.0	7
60.0 to 70.0	5
70.0 to 80.0	4
80.0 to 90.0	3
90.0 to 95.0	1
	37

Class (2). Range of total solids.	Samples in range.
Below 18.0%	6
18.0 to 20.0	5
20.0 to 25.0	27
25.0 to 30.0	45
30.0 to 35.0	16
	99

The problem of relatively evaluating a fluid extract on the basis of its total solids is more complicated than would appear at first sight. Squire would allow a range of from 17 to 27%.[1] Reasonable commercial practice and theoretical possibilities conflict on this point. The chief causes of this variation are: (1) In the hands of different operators results obtained by the same official method of percolation may differ. (2) The Official U. S. P. and B. P. methods of percolation themselves differ and yield correspondingly different results in extracting the same drug.

We extracted two 50 Gm. samples of genuine cascara bark by the B. P. method of percolation and obtained two liquid extracts yielding 21.79 and 21.03% of total solids. Working on equal amounts of the same bark, but following the official method of U. S. P. percolation, we obtained extracts yielding 30.50 and 31.48% of total solids. This difference may be traced directly to the variation of pharmacopoeial directions. The U. S. P. requires the drug to be exhausted with boiling water, and the percolate, to be evaporated to a definite volume. Neither the amount of boiling water to be used nor the size of the portions are specified. We found the volume of water necessary to completely exhaust the cascara bark to be exceedingly large compared with the volume to which the percolate must subsequently be evaporated. To completely exhaust 50 Gm. bark 2000 Cc. of boiling water in 75 Cc. portions were required, and this had to be evaporated to 37.5 Cc. Such a rigorous extraction, although theoretically official, would be very impractical commercially. At the same time it may be pointed out that extracts of cascara sagrada containing a greater proportion of total solids than Squire would allow may very readily be prepared by following official methods of percolation.

A well-known firm of manufacturing pharmacists in a private communication supplied us with data relative to the possibility of obtaining a uniform extract from cascara bark. Out of 24 lots of this drug, working on a commercial basis, the extractive never fell below 18.8% and exceeded 22% in only one instance. On this particular lot the extractive measured 26.6%. They were using the official U. S. P. method of percolation. It seems evident then that the official methods may be translated into a number of uniform procedures which may differ in results over a wide range according as the detail varies. All these considerations must be taken into account before passing an opinion on any sample based on a determination of its total solids.

SOLIDS PRECIPITATED ON DILUTION WITH WATER.

On dilution with water an aromatic extract of cascara sagrada which contains licorice or glycerin in pharmacopoeial proportions will retain all its solids in solution. On the other hand, a liquid extract of cascara whose solids are held in solution by virtue of its alcohol content will, when diluted, give a measurable precipitation, when the alcohol content drops below 10.0%. Our determination of this value was made by dropping 5 Cc. of extract into 95 Cc. of water and filtering off on a tared filter.

We tested 75 samples in this manner with the following results:

TABLE IV.

Class (1). Range of solids precipitated on dilution.	Number of samples in range.	
None	20	
1.0 to 2.0%	2	
	22	
Class (2).		
None	1	(this sample contained only 3% alcohol and no precipitation was to be expected.)
0.5 to 1.0%	5	
1.0 to 2.0	24	
2.0 to 3.0	17	
3.0 to 4.0	4	
4.0 to 4.5	2	
	53	

It is more than probable that any sample of Class 2 that is found to give less than 1.5% solids on dilution by this method will be found to be a diluted extract, from alcohol or other determinations.

REDUCING SUGARS.

We adopted the practice of making up to a definite volume the filtrate from the determination of solids on dilution and determining the reducing sugars in an aliquot thereof by means of Fehling's solution. In our results sugars are reported as glucose. There is evidently a normal content of such sugars for genuine fluid extracts of cascara sagrada, which varies within quite narrow limits from 5 to 7.5%. Aromatic extracts are always much lower than this and run from 1 to 3%.

TABLE V.

Class (1). Range of reducing sugars calculated as glucose.	No. of samples.	Class (2). Range of reducing sugars calculated as glucose.	No. of samples.
0.0 to 5%	16	4.0 to 5.0%	9
5.0 to 10.0	7	5.0 to 8.0	33
	23	8.0 to 10.0	12
			54

All genuine aromatic extracts in Class 1 come in the group from 0.0 to 5.0%. Samples above this range in this class are nondescript trade preparations. All samples in Class (2) running above 7% gave abnormally high total solids.

LICORICE, GLYCERIN AND AROMATICS.

These substances are used to disguise the bitter taste of the cascara. No quantitative work was attempted save in the case of glycerin and even in this case an exact determination presents considerable difficulty. An approximation was arrived at by the method of boiling off the glycerin in steam. Ten Cc. of the aromatic extract were slowly heated to 160° C. and by the addition of small quantities of water from time to time, the glycerin was boiled off. The difference in weight between the solids remaining at this temperature and those remaining after drying at 110° C. was considered to represent the glycerin. A certain increase in weight occurs owing to the slow oxidation of cascara solids at 160° C. and it is also possible that some glycerin may become non-volatile during the

process. The sum total of these errors as determined through such suitable blanks as could be devised is not sufficient to destroy the usefulness of the method. The former is the greater of the two errors and may account to a 2% increase of the total solids present after 8 hours at 160° C. By subjecting a mixture of pure glycerin and cascara extract to this treatment it was found that practically all the glycerin could be driven off. It may be calculated that there should be about 25% of glycerin W/V present in U. S. P. aromatic extract of cascara sagrada. Out of 17 samples examined 8 contained less than this amount. The exposure of a few drops of cascara extract on a porcelain plate[16] serves as a very simple and useful test of the nature of any cascara extract. A genuine liquid extract will dry up in a short time to a hard glassy varnish; an extract containing licorice or glycerin will not dry up even after long exposure over days and weeks, while an extract which has been so diluted as to lose the solids held in solution by virtue of its alcohol forms a sticky semi-crystalline mass which does not lose its stickiness for some days. All aromatic extracts examined were found to be non-drying, owing to their licorice and glycerin content.

ASH.

The value of an ash determination becomes evident from a consideration of its variation. If some attempt has been made to debitter the extract by application of lime, or application of the ordinary alkaline debitterants it is quite possible that through contamination or solution these might greatly increase the amount of ash. We found this to be the case. The color of the ash when heated strongly in a muffle is also a good indication of the nature of the sample. The ash from an aromatic extract containing licorice and glycerin will be greyish white; that from samples containing excess of lime salts will be pure white, while the ash of a genuine extract will be some shade of green, depending upon the amount of manganites present. This manganese comes from the bark and is sufficiently soluble in water to be found in this way in the ash. The calcium in the ash is not a constituent which might result from solution of the calcium salts of the bark during percolation. These salts are not removed to any extent by boiling the bark in water but are evidently present in the plant as oxalates and carbonates. From an inspection of the following table it will be seen that samples in Class (1) give ash values of a very wide range. In Class (2), however, the variation would seem to be within more reasonable limits.

TABLE VI.

Class (1).		Class (2).	
Range of ash.	No. of samples.	Range of ash.	No. of samples.
Below 1%	1	Below 0.5%	1
1.0 to 1.5	1	0.5 to 1.0	33
1.5 to 2.0	2	1.0 to 1.5	18
2.0 to 2.5	3	1.5 to 2.0	5
2.5 to 3.0	0	2.0 to 2.5	1
3.0 to 3.5	1	Above 2.5	1
3.5 to 4.0	8		—
4.0 to 5.0	1		59
5.0 to 5.5	2		
	19		

It would seem from our work that a range of 0.75 to 1.1% for the ash of genuine fluid extracts of cascara would not be unjust. Any extracts yielding ash above or below these limits were found to be abnormal in some other respect.

COLOR REACTIONS AND TESTS.

Hubbard[17] reviews the generally known color reactions for the emodin-bearing drugs and we shall not attempt to do more than supplement this work. The presence of emodin (trihydroxymethylanthraquinone) is characteristic of rhubarb, aloes, senna, and cascara. These substances, from their properties, may be found at any time in admixture. The Bornträger[18] reaction is the most convenient means of testing for this class of drugs. The well washed benzol extract of a few Cc. of the acidulated sample is made alkaline. In the presence of emodin a deep red color will appear in the water layer.

Cascara extract will give this test in greater dilution than any other common emodin-bearing drug while senna may fail to respond easily to the test. It must always be remembered that phenolphthalein may also be present. It may be removed by the method of Warren.[19] There is a difference between the colors given by emodin alone and by phenolphthalein alone, in alkaline solution, that is easily distinguished by the eye. The emodin color is a deep red and more like methyl orange in acid solution, while the color from phenolphthalein is a deep pink. In admixture the color is quite distinct from either individual colors, when observed through thin sections of solution. Moreover, the phenolphthalein color fades when the solution is made strongly alkaline and allowed to stand for some time.

Phenolphthalein may also be detected in the presence of emodin by the following procedure: By a careful adjustment of the reaction of the solutions the Bornträger reaction may be modified in such a way as to give a separation of emodin from phenolphthalein. Extract 2 to 3 Cc. of the acidulated cascara extract with 25 Cc. benzol. Wash the benzol several times with water in a separating funnel and make alkaline with a dilute soda solution of known concentration and note approximately the amount used. Both phenolphthalein and emodin will now pass into the water layer. Neutralize this soda solution with dilute sulphuric acid of corresponding strength until two or three drops would suffice to destroy all the red color, shaking well during this operation. Wash the benzol again two or three times with water. The benzol will now contain no appreciable amount of emodin but if phenolphthalein was present some will still remain in the benzol layer, and will now give a pinkish red color to a further alkaline wash of the benzol; in the presence of phenolphthalein this akaline wash will remain practically colorless. Differences between the solubility of phenolphthalein and emodin under these conditions coupled with the fact that emodin would seem to be a stronger acid than phenolphthalein probably accounts for this reasonably close separation. This method lends itself to fairly rapid work.

In attempting to carry out a Bornträger test for emodin, the operator must always have in mind the possibility that alkalies have been used to debitter any given extract. Many extracts of cascara will give a distinct red emodin test on simple dilution with water. Extracts which have been treated with alkalies and which yield a high ash are frequently so strongly basic that relatively quite large

amounts of acid must be added before a positive Bornträger reaction may be obtained.

All color reactions, when alkaline salts are used as a basis and where the formation of rings of different shades was depended upon to indicate the presence of emodin-bearing drugs other than cascara, were found to be untrustworthy. When the ether extract of any of the emodin-bearing drugs is poured into a solution of an alkaline salt a reddish ring will be formed at the junction of the two layers. This is really a miniature Bornträger reaction. The colors produced in these tests depend more on the concentration of emodin and chrysophanic acid in the ether layer than on any other single factor. The depth of color produced by equivalent amounts of ether extract of cascara, aloes, rhubarb and senna with solutions of borax, sodium hydrate, ammonium hydrate, sodium carbonate, sodium silicate, or any solution of salts alkaline by hydrolysis, were found to range from strong to weak in the order in which the drugs are named. The ether extract of a cascara never failed to give a decided red ring with these alkaline solutions and that of senna with equal regularity gave a much fainter red ring. It is to be noted that a ring such as was given by senna could be obtained by the action of a very dilute ether extract of cascara on these alkaline solutions. The ether extract of a pure infusion of rhubarb will give a blue color when brought in contact with a solution of ferrous sulphate.[20] This may be due to the presence of tannic acid. When one tries to follow this reaction in the presence of 50% cascara extract the detection of the rhubarb becomes almost impossible for the reason that, although cascara does not give the same coloration as rhubarb, it does give a color change sufficiently dense to obscure the rhubarb reaction. It is quite safe to say that small percentages of emodin-bearing drugs are much more likely to be missed than they are to be positively identified when present in unknown admixture in cascara. Senna is more commonly used in admixture with cascara than any of the others and is most difficult to detect. The ether extract of senna is said to impart a yellow to brownish coloration to ammonium thiocyanate or ammonium molybdate solutions.[21] We were unable to obtain either reaction and in each case observed no color change. The absolute detection of aloes has been better worked out than that of any of the other emodin-bearing drugs. Mossler[22] claims the ability to detect 0.2 Gm. of aloes in 5 Gm. of rhubarb or cascara. The fluorescence test[23] for aloes using borax solution with the ether extract, is certainly not sufficiently delicate to be of any value as a test for aloes in the presence of much cascara. Most of the samples of aromatic cascara and a large percentage of the trade preparations which we examined yielded a relatively faint test for emodin indicating a very low content of cascara extractive. It is worthy of note also that these same samples gave us unusually low manganese numbers.

MANGANESE NUMBER.

It has been pointed out in a previous article by us[24] that the bark of *Rhamnus purshiana* contains a relatively large quantity of manganese which is soluble by the method of percolation. The general usefulness of this determination depends on the fact that the manganese content of this bark is greatly in excess of that of other laxative drugs. It is exceeded by *Rhamnus frangula*, but this bark, by reason of its higher cost and the fact that it is imported is not likely to be used to replace

cascara sagrada. In liquid extracts then where cascara is the only drug extractive present a determination of the manganese content of the ash becomes a quantitative measure of the amount of cascara extractive present. Before trusting such data it is necessary to show that the manganese content of cascara is fairly uniform, or at least to define its limits. On an air-dry basis it has been found that the lower limit is around 0.0093% and the upper limit 0.015%. For the purpose of this work where the manganese is used as a standard the lower limit is the more important and it is safe to say that the greater part of the bark on the market will reach this standard. It is also necessary to show that the methods of percolation extracts this manganese in a uniform manner. It has been shown that for a definite method of percolation the manganese is extracted in proportion to its total amount in the bark.[25] For a certain bark it was found that the B. P. method of extracting gave 0.0023% manganese extracted and the U. S. P. gave 0.0028% maganese.

This was due to the fact that in our application of the latter method we used so much water and washed so often that the unusually high value of 30% was obtained for the solids extracted. It is thus possible to establish the minimum amount of manganese that should be present provided genuine cascara bark has been used and no dilution of the extract has taken place. For a liquid extract one Cc. is the equivalent of one Gm. of the bark. The percentage of manganese W/V in the extract is in direct proportion to the amount of cascara solids present. Therefore this percent is a direct measure of the bark equivalent of the extract. With this as a basis we have developed a manganese number for these extracts. We have defined this to be the percent of manganese W/V × 100,000. Our lower limit then would come at 230 for samples prepared from air-dry bark. The amount of manganese will be proportional to the solids extracted; that is, the percent of manganese in the total solids of genuine extracts of cascara should be an approximate constant. Considering all our results where extraction may not have been uniform, we may say that this number varies from 0.01 to 0.02 for all samples found genuine. If the number falls below this limit it is evident that the solids of this extract are not all cascara solids. This manganese test is of particular value in distinguishing *Rhamnus purshiana* and *Rhamnus californica*. The latter contains only about one-third the manganese of the former and yields an extract with a manganese number of about 80. Whether or not some of the extracts examined which show low manganese numbers have been prepared from this bark is a matter of inference. The manganese content of licorice root[26] and its extract is sufficiently low not to interfere with the application of this method to aromatic extracts. The presence of no other common laxative drugs destroys to any extent the value of this manganese number. If, on the other hand, these drugs displace cascara, the manganese content will be very much lowered. It is safe to say when considering aromatic extracts that their manganese content varies directly with their cascara content. The method of estimation is that given elsewhere by us,[27] except that in the case of liquids, 10 Cc. were taken as a sample, being the equivalent of 10 Gm. of the bark when properly prepared. From the ash of this amount the manganese was determined by the ammonium persulphate method with silver salt as catalyzer. 76 samples are tabulated as follows:

TABLE VII.

Class (1).		Class (2).	
Range of manganese.	No. of samples.	Range of manganese.	No. of samples.
0 to 50	8	0 to 100	0
50 to 100	2	100 to 150	6
100 to 150	1	150 to 200	6
150 to 200	5	200 to 250	7
200 to 250	1	250 to 300	10
250 to 450	2	300 to 350	6
450 to 600	2	350 to 400	3
600 to 700	2	400 to 500	13
	—	500 to 600	1
	23	700 to 800	1
			—
			53

In conclusion, our thanks are due to Dr. J. M. Francis, of the Parke, Davis Co., Detroit, Mich., who kindly supplied us with genuine samples of these barks and practical information of value.

SUMMARY.

(1) Complete data relative to the analysis of 76 samples of extracts of cascara has been given.

(2) It has been shown that methods of percolation are not sufficiently detailed in various pharmacopoeias to allow general uniformity in trade preparations.

(3) A fairly rapid and reasonably conclusive test for the presence of phenolphthalein in emodin-bearing drugs is proposed.

(4) The introduction of a Manganese Number for cascara extract is proposed as a method for determining the amount of cascara extractive present, and as a basis of judgment on the nature of the extract.

REFERENCES.

1. Johnson and Hindman, *Am. J. Pharm.*, p. 387 (1914) 139 articles of reference to *Rhamnus purshiana* are given here.
2. Tichborne, British Year Book of Pharm., 1901, p. 439.
3. E. A. Mort and W. Rothe, *Chem. Abst.*, 1913, p. 3394.
4. B. P. 1914, p. 86, B. P. Codex 1911, p. 268.
5. B. P. Appendix 1914, p. 526.
6. B. P. 1914, p. 377.
7. B. P. Codex 1911, p. 269.
8. Penschuck, *Chem. Abs.*, p. 1097, 1915.
9. U. S. P. IX, p. 147.
10. *Ibid.*, p. 179.
11. *Ibid.*, p. 180.
12. *Ibid.*, p. 176.
13. For detailed analysis of these samples see *Bulletin* No. 386 "Cascara Sagrada," Dept. of Inland Revenue, Ottawa, Can.
14. Squre's Companion to B. P. p. 410 (1916).
15. *Ibid.*
16. C. R. Tichborne, British Year Book of Pharm., p. 439 (1901).
17. *J. Ind. Eng. Chem.*, 9, 518 (1917).
18. *Z. Anal. Chem.*, 19, 165 (1880).
19. Warren, *Amer. Jour. Pharm.*, Oct. (1914), p. 444.

20. W. S. Hubbard, *J. Ind. Eng. Chem.*, 9, p. 520 (1917).
21. *Ibid.*
22. Mossler, *Pharm. Post*, 46 (1917), p. 313.
23. U. S. Pharmacopoeia, IX (1916), p. 37.
24, 25, 26, 27. Westman and Rowat, *J. Am. Chem. Soc.*, March, pp. 559, 560, 561 (1918).

THE LABORATORIES OF THE
INLAND REVENUE DEPARTMENT,
OTTAWA, CANADA.

THE RECOGNITION AT SIGHT OF POISONOUS AND MEDICINAL PROPERTIES IN UNKNOWN PLANTS.*

BY H. H. RUSBY, M.D.

The following paper is based on three simple facts:

1. There are certain groups of plants whose members are so uniform in medicinal or poisonous properties, or both, that the mere recognition of a plant as belonging to one of them is sufficient to indicate its general medicinal usefulness or its dangerous nature.

2. Associated with these physiological relationships are genetic relationships which are clearly indicated by the structural characteristics.

3. These structural characteristics are so manifest that the physician or pharmacist who possesses a fair practical knowledge of structural botany can at once recognize them, and thus be enabled, in cases of emergency, to utilize the plant medicinally or to avoid it if poisonous, in the absence of other knowledge concerning it.

Centuries ago, before the relationships among plants were understood, and when there was a complete absence of knowledge concerning the nature of medicinal action, mankind believed in divine revelation regarding medicinal treatment, which was supposed to be afforded only to the priesthood, who based thereon their claims to service as physicians. Later, a belief developed that this revelation had been made to all mankind, through the impression upon each medicinal plant of some visible sign of the nature of its medicinal action. This idea persists to some extent to the present day. One of my earliest recollections was that of being taken out by a neighbor, descendant of an old family of Dutch settlers, who explained to me the theory of signatures. "You will find," said he, "if you hunt close enough, that every plant has a sign somewhere that shows what part of the body it is good for." We pharmacists see this belief perpetuated in the common names of many of our drugs, as the blood root, the liver leaf, Solomon's seal, golden seal, lungwort moss, snake root and Devil's bit.

There have been various other so-called methods by which one was supposed to be able to judge the physiological properties of plants. A quarter of a century ago, a story went the rounds of the public press to the effect that the peculiar lurid-purple color that we observe upon the stem of the castor-oil plant, the pokeberry and the angelica, was always indicative of medicinal or poisonous properties, or both. I remember another to the effect that finely divided leaves, as seen

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* A lecture, illustrated by lantern slides, before the Chicago Convention, A. Ph. A., 1918. Contributed to Scientific Section.

in conium and ragweed, possessed the same significance. Probably all here present are familiar with the story that has several times circulated in American newspapers, and doubtless will do so again, that poisonous fungi can always be known by their turning a silver spoon black when used for stirring them in cooking.

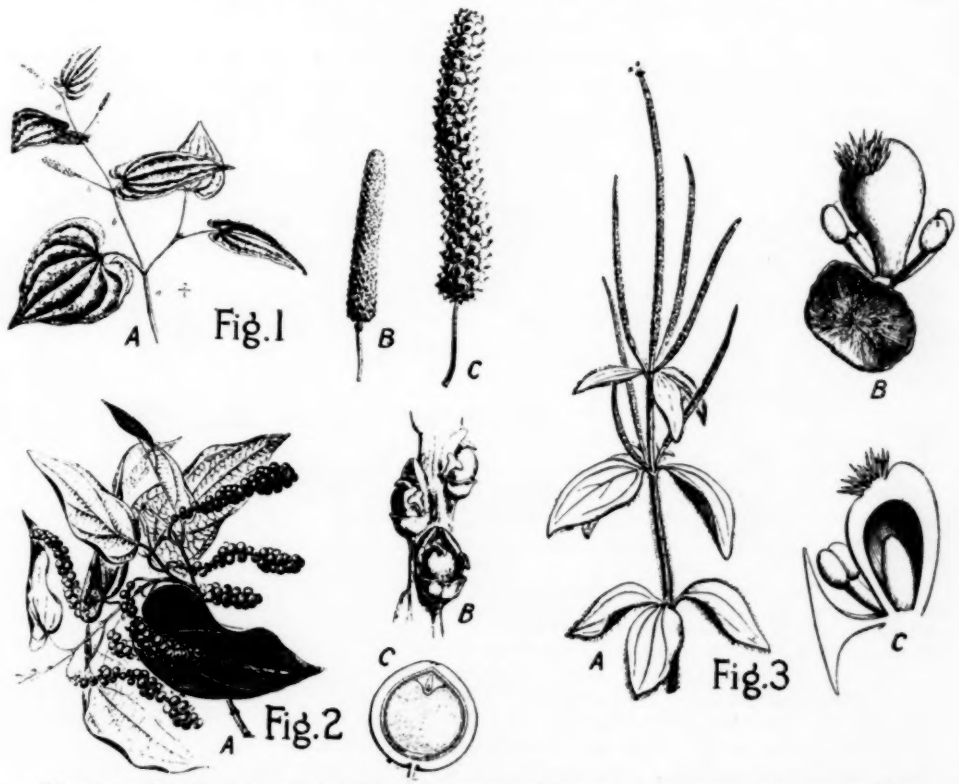
Science has taught all who are willing to learn that there are no such easy roads to reliable knowledge regarding plant properties. Judgment in this direction must depend upon accurate detailed information, studiously acquired. Nevertheless, it is possible for us, through the assembling and comparison of a great number of data, to reach certain generalizations that may be of value in cases of emergency.

It is my belief, based on many years of personal experience, that attention to the following illustrations, with their accompanying description, may be of great service to those who may find themselves separated from their base of supplies and dependent for drugs upon their utilization of the resources of the fields and forests about them.

A good illustration of my subject is found in

THE PIPERACEAE OR PEPPER FAMILY.

This small family, comprising only some eight or ten genera, even if we include the Lizard-Tail Family or *Saururaceae*, is exceedingly uniform in its aromatic



Piperaceae.—The characters of this family are so uniform that any of its members can be recognized through reference to these illustrations. Fig. 1 illustrates *Piper longum* and *P. Betle;* Fig. 2, *P. nigrum:* Fig. 3, *Peperomia.*

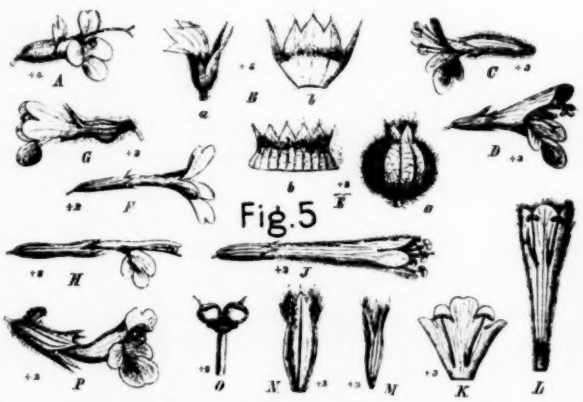
and pungent properties. We are all familiar with the properties and uses of Pepper, Cubeb and Matico, and these are shared by something like a thousand other species of the family, which are natives of the Old and New World tropics. In the pepper genus alone there are some five or six hundred species and, so far as my experience goes, they are practically all more or less pungent and disinfectant in their nature, and highly stimulant to the natural bodily functions. I have seen a great many of them confidently used in native practice in the treatment of serious disorders, and in some cases, a number of species would be used indiscriminately. In one extensive region I found an endemic disease called *espondia*, resembling some forms of cancer in its nature, symptoms and course, and regarded as almost invariably fatal to the natives attacked by it. Two of these natives, whom I had unsuccessfully treated with sulphuric acid charcoal paste, were afterwards completely cured by their fellow Indians through the continuous application, during several days and nights, of heated leaves of a species of Piper. The attendants worked in relays, the exhausted leaves being removed and fresh, hot ones applied at intervals of a few minutes.

The characters of these plants as indicated in the accompanying picture are unmistakable.

The members of a number of families are essentially aromatic, yielding volatile oils on distillation. While there are important differences in the action of different individuals of the same family, there is at the same time sufficient uniformity to enable the physician to use them almost indiscriminately for some purposes. It is therefore of considerable importance that the family characters of the aromatic plants should be readily recognized.

THE LABIATAE OR MINT FAMILY.

The members of this family are, almost without exception, good carminatives and intestinal disinfectants, as typified in the mints, thymes, marjorams and pennyroyals. Although poisonous effects may be obtained from excessive amounts of the volatile oils, the plants themselves must be considered as non-poisonous.



Labiatae.—Fig. 4, species of *Salvia*, well displaying the habit of leaves and inflorescence, as well as the bilabiate calyx and corolla. Fig. 5 shows variations in form of calyx and corolla, and good illustrations of diandrous and didynamous androccia. *A* and *B* show *Thymus; C, Hyssopus; D, F, G* and *J, Satureia; E, Saccocalyx; H, K* and *L, Hedeoma; M, Pogogyne; N, Thymbra; O, Dicerandra; P, Melissa.*

These plants are very easily recognized by their square stems, opposite, oilbearing leaves without stipules, usually bi-labiate calyx and corolla, diandrous or didynamous androecium and 2-carpelled ovary which divides in the fruit stage into four small nutlets. Members of this family are found in nearly all parts of the world and one could, with certain safety and efficiency, employ almost any plant possessing the foregoing characters for the effects mentioned.

THE LAURACEAE OR LAUREL FAMILY.

In this family, as typified by camphor, cinnamon, coto and sassafrass, we have still more powerful intestinal stimulants and disinfectants and these properties are even more uniform throughout the family than in the Labiatae. The natives of many tropical regions rely upon one or another of them in the treatment of the most severe intestinal disorders. The extracted active principles may be more actively poisonous than those of the former family, yet the drugs themselves are equally harmless, and one may resort to the use of any of their barks, the portion usually most active, without fear of harmful results, or doubt as to their medicinal value.

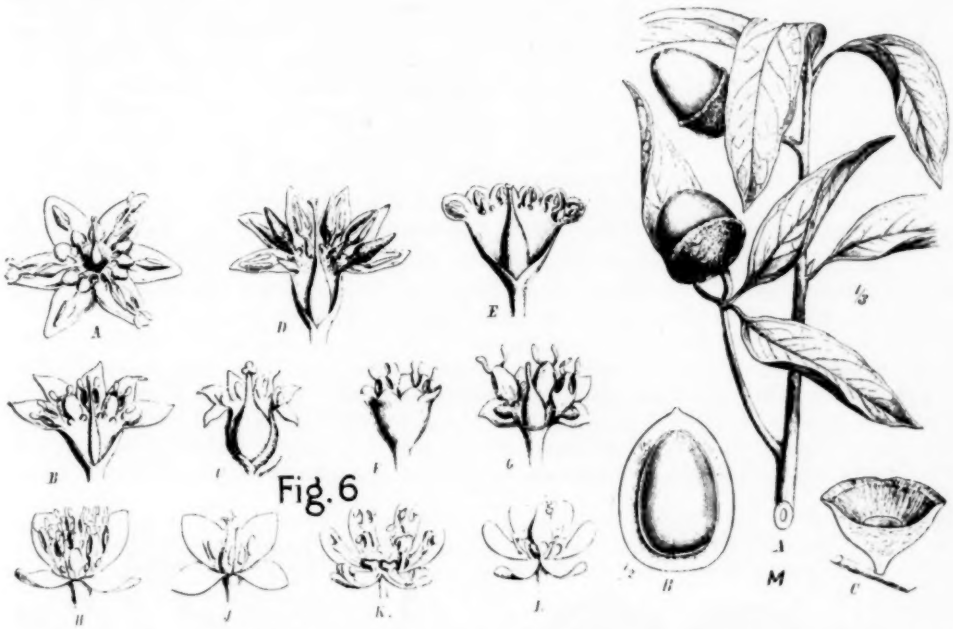


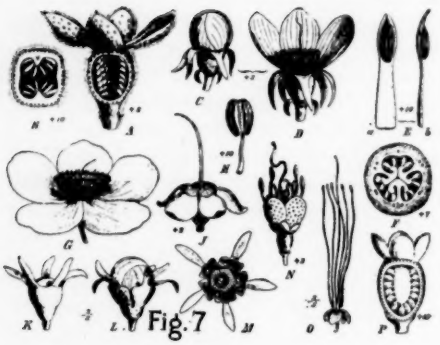
Fig. 6

Lauraceae.—Fig. 6, typical flowers, showing the regular 6-parted perigone, with several sets of stamens, some of them imperfect, the 4 locellae of the anthers embedded in a large fleshy connective and the valvular dehiscence. *A* represents *Bailschmiedia; B* and *C, Ampelodaphne, D, Cryptocarya; E, Aiouia: F* and *G, Acrodoclinium; T* and *J, Laurus; K* and *L, Lindera; M*, the leaves and fruit of *Nectandra* well characterizing those of the family.

Lauraceous plants are rather rare in temperate and arid regions, but in most tropical forests they occupy about the same position as to abundance as do the oaks in our own forests, while the variety is vastly greater. A botanist who is familiar with the family is never at a loss to recognize one of them by their leaf-characters alone, although these characters can scarcely be described in words. By their flowers, however, as well as by their fruits, they are easily recognized. Their flowers are 3-nerous, with the ovary superior, there being two, three or four sets of stamens, one or more of the sets usually sterile, and the anthers almost always divided into four locellae, with valvular dehiscence, the upper pair of locellae smaller, and all four immersed in a fleshy, flattened connective. Whenever these characters are clearly seen, identity may be regarded as established. Nearly everyone knows the character of the Sassafras fruit, with a peculiar, more or less fleshy cup at the base. This is the fruit form that characterizes the family as a whole.

Still more easy of recognition are the third and fourth members of this group of aromatic medicinal families, namely the *Myrtaceae* and *Umbelliferae*.

THE MYRTACEAE OR MYRTLE FAMILY.



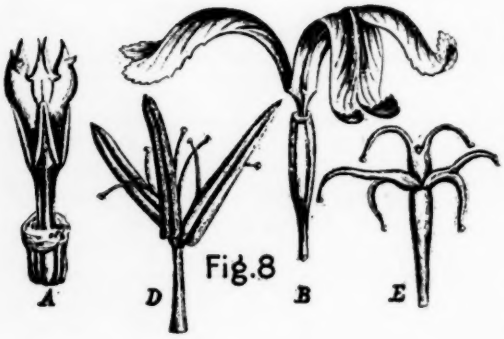
Myrtaceae.—Fig. 7 illustrates the opposite estipulate leaves, the 4- or 5-merous flowers, adherent calyx and numerous stamens borne on its margin The leaves are pellucid-dotted. *A* to *C* represent *Blepharocalyx; D* to *H, Pimenta; J* to *M, Mitranthes.*

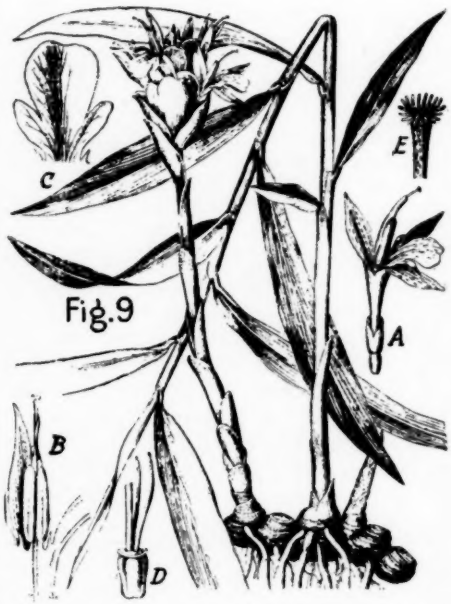
The properties of this family are well and commonly made known through cloves, allspice, eucalyptus, cajuput and myrtle. Many of them are relatively weak in activity but pretty nearly all have oil-bearing leaves, and properties similar to those of the families already discussed. The plants are in practically all cases shrubs and trees. Their leaves are opposite and destitute of stipules, and bear pellucid dots indicating the oil glands. The flowers are almost without exception regular and are usually 4-merous. The ovary is inferior and the petals and numerous stamens are borne on the margin of the adherent calyx tube. Recognition is almost infallible.

THE ZINGIBERACEAE OR GINGER FAMILY.

This family of monocotyledons may be included among the useful carminatives and intestinal stimulants, and usually possesses in addition agreeable flavoring properties, as observed in ginger, turmeric, zedoary and cardamom.

Its members are free from poisonous properties as ordinarily used, so that one is quite safe in resorting to the use of one of them, if quite sure of its family. There is here, however, some danger of confusion with the related Iris family and it is necessary to be closely discriminating in selection. It is worthy of note that the ginger family is not represented in temperate regions, while plants of the Iris family, although not uncommon in the tropics, are more particularly char-





Iridaceae and *Zingiberaceae.*—Fig. 8 illustrates *Iris* with its three regular and perfect stamens. Fig. 9 illustrates *Zingiber*, with only one of its anthers perfect, the others being petaloid.

acteristic of temperate and sub-tropical regions. The flowers of the ginger family are irregular and usually possess six stamens, but anywhere from one to five of these are destitute of anthers.

THE IRIDACEAE OR IRIS FAMILY.

Although this family is totally different in its physiological action and medicinal uses from the preceding, it is considered here because of a superficial similarity in the appearance of the plants of the two. This similarity need deceive no one, because the Iridaceae possess regular flowers, with only three stamens, all perfect.

The members of this family are, without exception so far as I know, strongly and usefully purgative, but they are irritant poisons, often violently so, in over doses.

THE UMBELLIFERAE OR PARSLEY FAMILY.

No family is more readily recognized than this one, notwithstanding that there are wide superficial differences. The most certain marks of identity are the umbellate flowers and fruits and the structure of the latter, consisting of two mericarps attached to a carpophore. Their alternate leaves have sheathing or clasping bases and mostly hollow petioles. These leaves are usually compound, as seen in parsley, carrot, celery and conium.

Unfortunately, we have no sure guide to the properties. The great majority of the members are innocuous, yet not a few, like conium and cicuta, are intensely poisonous. Some of the poisonous ones possess pleasant aromas, which have led to the occurrence of fatal accidents. On the whole, it can hardly be regarded as a safe procedure to employ these plants for their carminative properties, unless their individual identity and innocence have been established.

THE CONVOLVULACEAE OR MORNING GLORY FAMILY.

Reference should be made, in passing, to the properties of the plants of this well-known family. They are quite uniformly purgative, usually in all parts of the plants. The sweet potato and several others are peculiar exceptions.

THE MAGNOLIACEAE OR MAGNOLIA FAMILY.

This is another aromatic family, but one which combines bitter qualities with the aroma and whose plants, almost without exception, are excellently useful as aromatic bitters and stomachics and, properly used, valuable antiscorbutics. In their physiological and medicinal properties, as seen in *Magnolia*, *Liriodendron* and *Drimys* barks, they are closer to the Laurel family than to any of the others previously discussed. One is quite safe in resorting to the use of these barks and very certain to secure the aromatic bitter effects referred to.

The family consists of shrubs or trees, with alternate, simple and mostly entire leaves, with or without stipules and aromatic in all their parts. They have numerous distinct stamens and distinct sepals and petals, and their numerous pistils are either distinct or immersed in an elongated fleshy torus.

THE ARISTOLOCHIACEAE OR SNAKE-ROOT FAMILY.

Passing reference may be made to this interesting and uniformly aromatic-bitter family, the members of which cannot be mistaken, if one sees either their flowers or their fruit. The experienced botanist will identify them with equal readiness upon merely seeing a leafy stem. Their use must be resorted to with caution, because some of them are rather strongly irritant poisonous.

THE RUTACEAE OR RUE FAMILY.

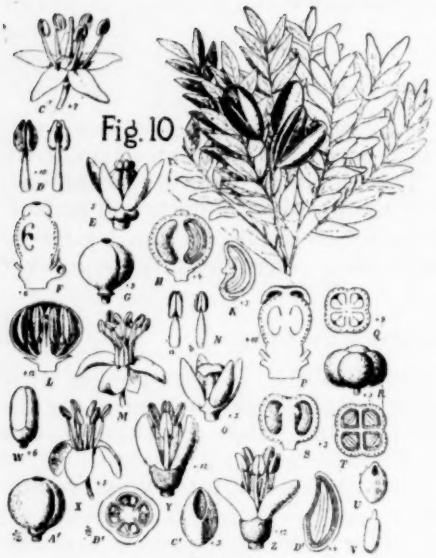


Fig. 11

Rutaceae.—Fig. 10, *Chloroxylon*, well illustrates the habits of these plants, with their pinnate leaves, though often having only three, or even a single leaflet, while Fig. 11 well illustrates the flower-forms which, although greatly varied, always present the same basic characters. The same forms characterize the *Simarubaceae*, except that its carpels are 1-ovuled.

This is another family which combines aromatic and bitter properties and which is in nearly all cases medicinal. Unfortunately its recognition is of but little practical value, partly because the medicinal properties are widely diversified, with no external indications of their nature, and partly because the plants are in most cases more or less poisonous, while in others little or not at all so.

The leaves are alternate and estipulate and usually compound. When held against the light they show pellucid dots, as is so well known in rue, buchu, jaborandi and orange leaves. The flowers are 4- or 5-merous and the carpels are separate or united only at the base or, at the most, so united as to result in a lobed fruit. The cells of the ovary are almost invariably 2-ovuled.

A number of families are uniform in their possession of bitter properties, without any considerable associated aroma, and are commonly used as simple bitters.

In this connection, the following may be noted:

THE SIMARUBACEAE OR QUASSIA FAMILY.

Although quassiin and some other principles extracted from the plants of this family are poisonous, the plants themselves are scarcely so, notwithstanding that there are records of mild poisoning, in the form of chronic gastritis, resulting from their continuous use, as from drinking water permeated by extracted matters from the *Ailanthus*. Almost without exception, these plants may be usefully employed as simple bitters.

They are very easy of recognition, possessing all the characters of the *Rutaceae*, except that there is but one ovule in each carpel and the leaves have no pellucid dots.

THE MELIACEAE OR AZEDARACH FAMILY.

In connection with the *Rutaceae* and *Simarubaceae*, brief reference should be made to the Azedarach family. Nearly all of its plants possess nauseating expectorant or even emetic properties similar to those of ipecac, as seen in Azedarach and Cocillana barks, and in Naregamia.

The plants have a very similar habit to that of the *Simarubaceae*, having alternate compound leaves without pellucid dots. The general flower-structure

Meliaceae.—The habit of these plants is much the same as that of the *Rutaceae* and *Simarubaceae*, but the filaments form a cup, with the anthers at its margin.

is similar, but the filaments form a cup, with the anthers borne at or near its summit.

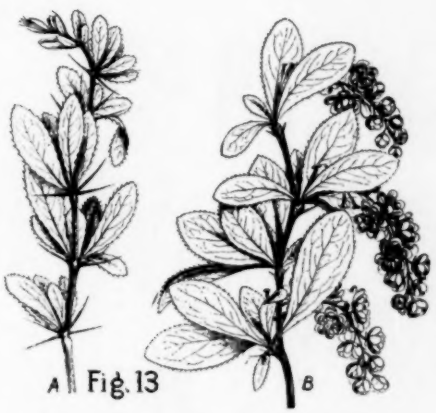


Fig. 13

Berberis vulgaris; the members of this genus present so similar an appearance that familiarity with one will lead to the recognition of all.

BERBERIS AND ITS ALLIES.

The properties of this entire group are typified in those of the species of *Berberis* which have been employed so generally in medicine, and are due to the constituent berberine. There is not the slightest difficulty in recognizing them on the part of one who has become familiar with any species of the genus.

THE SALICACEAE OR WILLOW FAMILY.

This remarkably uniform and important family may well be included among those distinguished for bitterness, although, in addition, it has highly important anti-rheumatic and anti-periodic properties, due to itsalicin and populin, and astringent properties due to its rather large percentage of tannin. These properties are shared by every member of the family, so far as known.

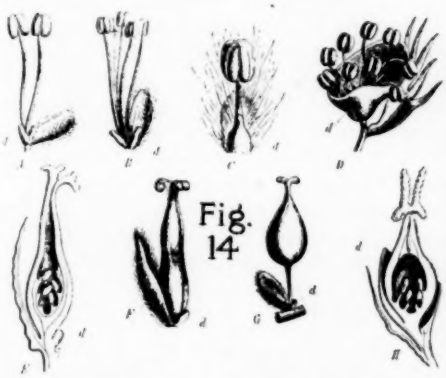


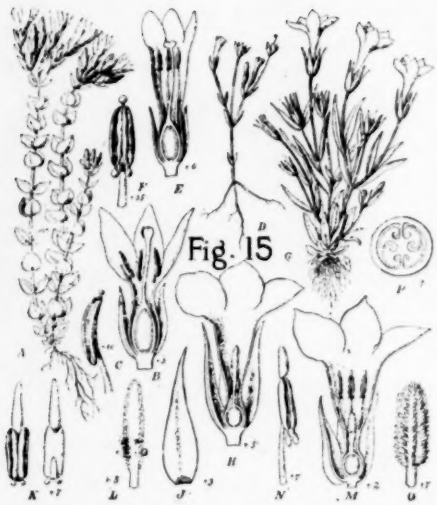
Fig. 14

Salicaceae.—A, B, C, E, F and *G* illustrate the flowers, with their entire scale, of *Salix D* and *H* show those of *Populus*, the scale being fimbriate.

The recognition of these plants, always shrubs or trees, is infallible and general, practically everyone being acquainted with the inflorescence of one or more species of willow and poplar, the only two genera of the family. It is true that in far northern regions the inflorescence is sometimes reduced to but one or two flowers, but the characters of these render them unmistakable. The inflorescence scales of the willows are entire, those of the poplars lacerate. It is very interesting to note that the willow furnishes the trees growing nearest to the north pole and also the most northern shrubs, after the limit of tree growth has been passed. In high northern regions, these shrubs are prostrate, covering the surface of the ground with their branches, often only an inch or two in length.

THE GENTIANACEAE OR GENTIAN FAMILY.

This family perhaps surpasses all others in the vegetable kingdom in the uniformity of its medicinal properties, as typified in Gentian, Chirata, Erythraea, Sabbatia and Menyanthes. Although these properties are of the simplest possible nature, those of the simple bitters, promoting the appetite and digestion and generally exciting healthy functional activities, they are of much importance in both scientific and domestic medicine. Inasmuch as these plants are most widely distributed through both sub-tropical and temperate regions, so that one can scarcely fail to find one or more of them in almost any region where he may be, and since such plants are almost invariably uniform in the possession of this property, and are equally uniform in being free from toxicity, it becomes of the greatest value to be able to recognize their family relationship at sight. I do not remember to have



Gentianaceae.—Here we see the same opposite leaves without stipules, and the tubular corollas with adherent stamens which characterize the other families of the order *Gentianales*, but here we have a one-celled though two-carpelled pistil. *A* to *C* represent *Sebaea; D* to *F, Lagenias; G* to *P, Belmontia.*

ever visited any such region where I could not have supplied myself with a good simple bitter derived from this family, had the necessity arisen.

These plants have opposite estipulate leaves, tubular corollas and adherent stamens, as do those of the other families of this order, the *Gentianales*, several of which are to be considered later. The ovary, however, is always one-celled, and the placentae are parietal. They are devoid of milky juice and have a bitter taste. There is, moreover, no stigmatic ring, as in the *Apocynaceae*.

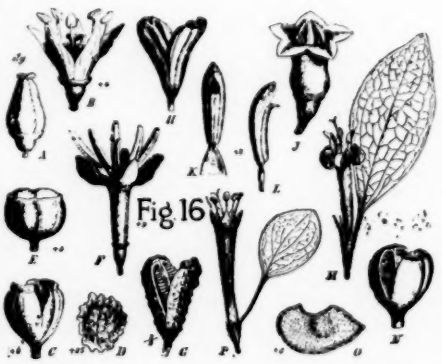
THE RUBIACEAE OR MADDER FAMILY.

This great family, of nearly four hundred genera, and five thousand species, rich in dyestuffs, may be regarded as pre-eminent in the vegetable kingdom in the production of alkaloids, its only rival in this direction being the poppy family. Unlike the latter, it is almost free from poisonous properties. It is true that such drugs as cinchona, coffee and ipecac contain principles more or less toxic, but in the ordinary sense of the term, the plants are not poisonous. They are, however, highly medicinal. The number which are effectively employed in native and domestic practice and which are practically unknown in professional medicine, is large. Were all other vegetable drugs to be lost and the world forced to depend upon this family, the variety and value of its drugs would undoubtedly cause surprise in scientific circles. It is not too much to say that recognition of a plant as belonging to this family justifies a presumption of its medicinal activity. Unfortunately, we cannot so judge of the nature of those activities, since they are of a very diverse character.

No other family of plants is more easy of recognition. Its adherent calyx and tubular corolla are shared by a number of others, but a glance at its opposite leaves *with stipules* suffices for identification. These stipules constitute one of the great features of interest in the family, forming its chief field of variation and specialization, and the classification of its genera can be based largely upon them.

The only families, the distinction of whose members from those of the *Rubiaceae* is difficult, and this only on superficial observation, are the *Verbenaceae* and *Apocynaceae*, both of which possess opposite leaves, often closely resembling those of the *Rubiaceae*, but never having stipules.

The plants of the *Verbenaceae* are non-poisonous, so that a mistake would



Rubiaceae.—Fig. 16 illustrates the flowers and fruits. The calyx is completely adherent to the ovary, the corollas are tubular and the filaments are adherent to it. The fruits are dicarpellary. *A* to *E, Chimarrhis; F* and *G, Rustia; H, Condaminea; J* to *L, Tresanthera; M* to *O, Pinckneya; P, Pogonpus.*

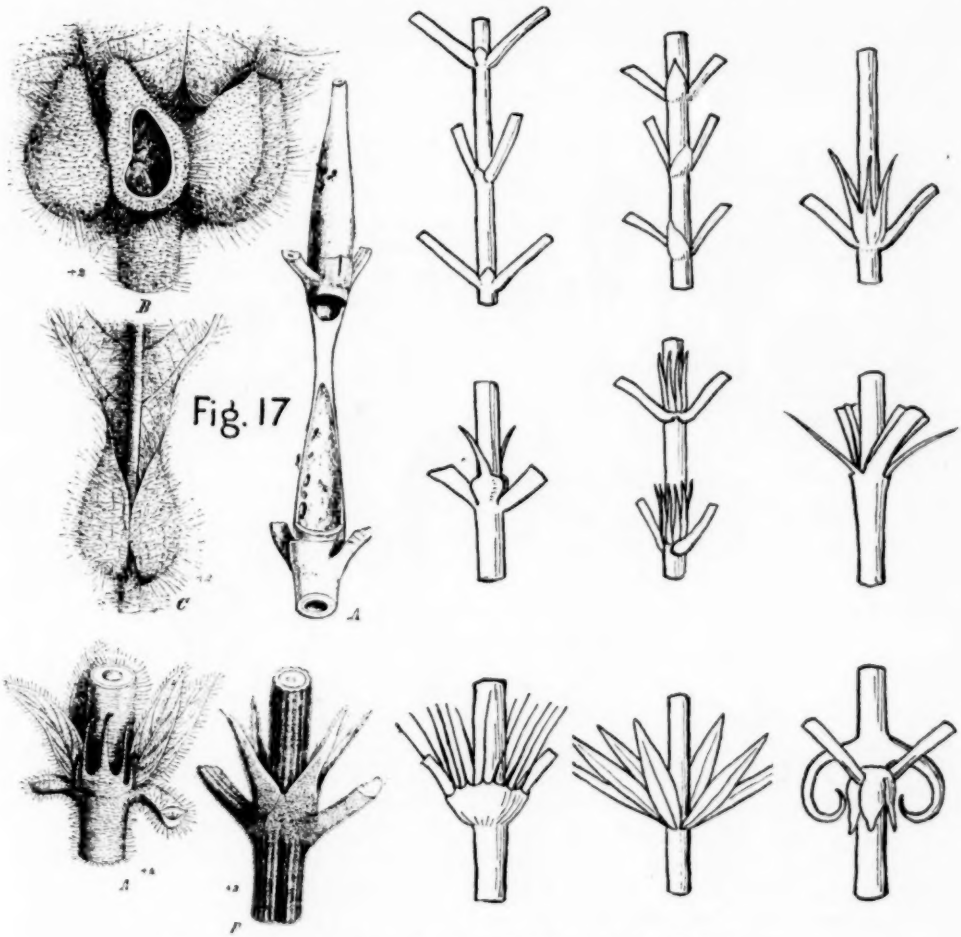


Fig. 17 illustrates a variety of stipules pertaining to the family *Rubiaceae*.

not be serious. Their medicinal importance is slight, merely because they have been little used in scientific medicine. They are by no means devoid of medicinal properties, even the humble vervain being entitled to a distinct position in the materia medica.

THE APOCYNACEAE OR DOGBANE FAMILY.

Hardly any other family of plants is of greater interest in my discussion than this one, from the standpoint of medicine as well as of toxicology. With the poisonous properties of *Strophanthus*, *Apocynum*, *Holarrhena*, *Kicksia*, *Oleander* and *Geissospermum* most of us are familiar, but those of *Landolphia*, *Allamanda*, *Plumiera*, *Vinca*, *Rauwolfia*, *Voucanga*, *Malouetia* and *Echites*, as well as the arrow poisons *Carissa*, *Akokanthera*, *Cerbera*, *Thevetia* and *Wrightia*, are not so generally known.

With few exceptions, the other members of the family, which are very numerous, share in these poisonous properties. These plants are exceedingly abundant and generally distributed throughout the tropical forests of both the Old and New World, so that it becomes a matter of first importance that one thrown upon his own resources should be able to recognize them at sight. This is no less important from the medical point of view, since they are with equal regularity

medicinally active as circulatory stimulants. It would be a somewhat difficult matter to find any extensive locality in the South American forests where one would be unable to find, within an hour's search, some member of this family which he could safely and effectively employ in this way.

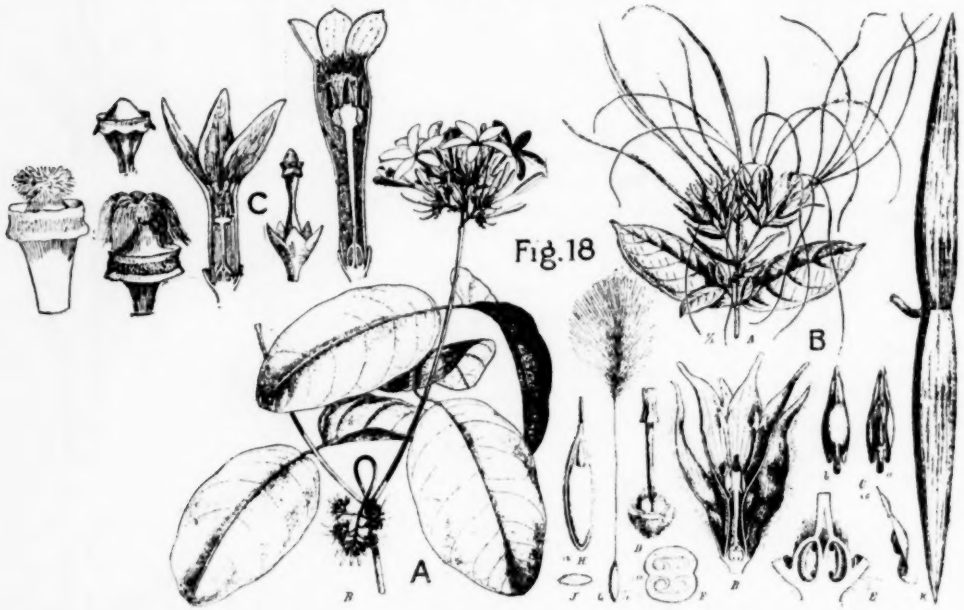


Fig. 18

Apocynaceae Stigmas.—*A* illustrates *Landolphia*, showing the general habit, opposite estipulate leaves and tubular flowers. *B* illustrates *Strophanthus*, showing the tubular corolla, with adherent stamens, the anthers adhering to the stigmatic ring. *C* illustrates various forms of the stigmatic ring.

Aside from other characters, the members of this family are distinguished from all others by the character of the pistil. While its two ovaries are separate, and form separate fruits, its styles above the ovaries are united and possess near the summit a peculiar ring or band surrounding the style just below the stigma, to which the anthers are attached. This character, taken in connection with the opposite, estipulate leaves, milky juice and tubular flowers, renders recognition instantaneous and infallible.

Fig. 19

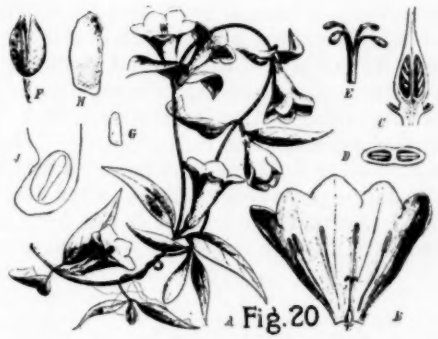
Verbenaceae.—*Tectona* is typical. It shows the opposite estipulate leaves and tubular flowers, as in *Apocynaceae*, but there is no similarity whatever in the pistil.

Through gross carelessness, one might mistake a member of the closely related milkweed family, *Asclepiadaceae*, for this one. It also has opposite estipulate leaves, a milky juice and tubular flowers. There are peculiarities in the leaf-characters which will enable experienced botanists to tell the one from the other, although the method of doing so could not be characterized in words. The flowers, however, are quite different, being devoid of the united styles with stigmatic ring and having the pollen grains coherent in pollinia or pollinaria.

This family is destitute of the heart-stimulant properties of the *Apocynaceae* and their medicinal value is not great.

THE LOGANIACEAE OR NUX VOMICA FAMILY.

Closely related to the *Apocynaceae* stands the pre-eminently poisonous family, *Loganiaceae*, known in medicine by *Gelsemium*, *Strychnos* and *Spigelia*. The plants of the two families bear a striking superficial resemblance, but those of the *Loganiaceae* have no milky juice and possess a single two-celled ovary instead of the two distinct ovaries of the *Apocynaceae*, and are wanting in the stigmatic ring. This is a small family and its plants are almost uniformly violently poisonous. On various occasions, on encountering unknown members of this family in the tropics, I have inquired of the natives as to their properties and have never yet failed, if the natives possessed any knowledge concerning them, to be informed that they were poisonous. Aside from its important uses in medicine, this family yields largely of materials used in arrow poisons. *Potalia* is much like *Strychnos* in its action. In Mexico and in the South American Andes, I have found many species of *Buddleia* credited with dangerously poisonous properties. It is unfortunate that, although these plants are almost always medicinal, we are unable to generalize as to the nature of the medicinal properties.

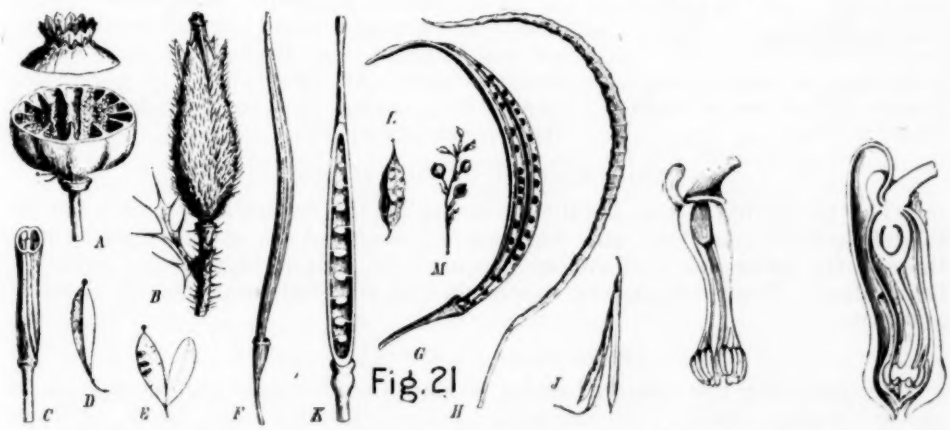


Loganiaceae.—*Gelsemium* well displays the opposite estipulate leaves and tubular corollas, with adherent stamens, as in *Apocynaceae*, but there is a single ovary and there is no stigmatic ring.

THE PAPAVERACEAE OR POPPY FAMILY.

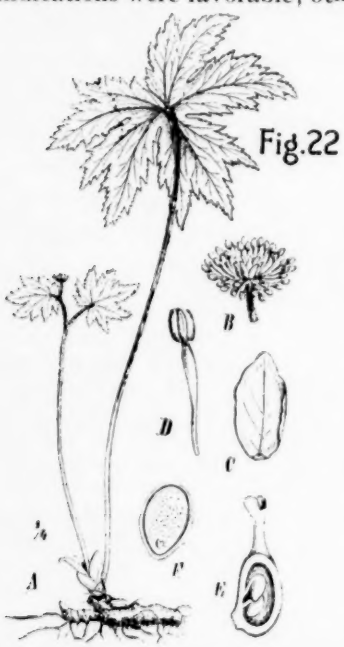
The members of this family are almost invariably alkaloidal in their composition and their alkaloids, in most cases, agree in being locally irritant and systemically narcotic, and more or less strongly poisonous. Practically every one which has been physiologically investigated has been found active, and most of them medicinally useful. Unfortunately, these medicinal properties are not sufficiently uniform to allow of generalization, but it may be said that any member of the family is worthy of chemical and medical investigation.

To one not familiar with the genera of this family, the fruit characters offer the best means of recognition. These fruits are for the most part similar to those



Papaveraceae.—Illustrates the fruits. *A*, that of the Poppy, is an exception; *B*, *Argemone*; *C*, *Glaucium*; *D* and *E*, *Macleya*; *F* and *G*, *Eschscholtzia*; *H*, *Hypecoum*; *J* and *K*, *Corydalis*; *L*, *Adlumia*; *F*, *Fumaria*. The blood-root pod is similar to that of *Eschscholtzia*. The two pictures at the right show the spurred flowers of the *Adlumia* branch of the family.

of the bloodroot. One of my most interesting experiences in field work was in connection with a member of this family, a species of *Bocconia*. Riding my mule along a mountain trail, a pendant cluster of fruits brushed across my face. Instantly, by force of habit, I caught at it and secured a specimen. On examining it, I was struck by its close similarity to that of our common bloodroot. Dismounting, I turned back and found that it was borne upon a small tree, the bark of which exuded a thick, blood-red juice when punctured. A quantity of the bark was collected and at my first stopping place was tested. It presented undoubted evidence of containing several alkaloids. Inquiring among natives of the neighboring village, I was informed that the leaves yielded an important domestic medicine, and that its name was "Hamakari." Among the other curious things which were told me was that infants dangerously ill with fever were wrapped in the large poppy-like leaves, after strongly heating the latter at the fire. If the leaves turned black after being for some time against the skin of the infant, the indications were favorable; otherwise a fatal result might be expected. I presume that this conclusion rested upon the fact that if the infant perspired, the perspiration would cause color reactions, turning the leaves black.



Ranunculaceae.—Fig. 22 illustrates Hydrastis, with all parts of the flower free and distinct.

THE RANUNCULACEAE OR BUTTERCUP FAMILY.

The members of this family almost invariably contain juices which act as local irritants, and this property is in many cases found to reside in specific chemical principles such as we find in Aconite, Larkspur and Hydrastis. As irritants alone, these plants possess little medicinal value, but it so happens that they are also almost uniformly circulatory depressants. In Adonis and one or two others, we find exceptions to the rule, but the latter is sufficiently uniform to enable one thrown upon his own responsibility to rely with considerable confidence upon obtaining results in this direction by the use of a member of this family, even though he had no specific knowledge concerning it.

The family is easily recognized by its alternate, usually lobed or divided leaves, without stipules, but having the base considerably dilated. Its flowers are free and distinct in all of their parts, except for the rarely and partially coherent carpels.

THE LILIACEAE OF LILY FAMILY.

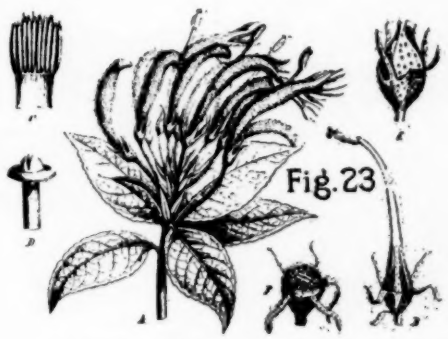
The properties of this family, as is true of the *Ranunculaceae*, are not absolutely uniform, yet they may be regarded as almost the exact counterpart of those of the latter, its members, as seen in Squill, Lily-of-the-valley, Garlic, etc. being almost always circulatory stimulants and powerful promoters of glandular activity.

THE LOBELIACEAE OR LOBELIA FAMILY.

In discussing this family, I desire to state that I wholly exclude from it the closely related family *Campanulaceae*, notwithstanding that many botanical authorities believe in uniting the two.

The *Lobeliaceae*, so far as known, are all powerfully poisonous, their properties being typified in our *Lobelia inflata*. For this reason it is important that they be

recognizable at sight. As poisons, they are intensely irritant and decidedly narcotic. *Isotoma longiflora*, of Cuba and other West Indian islands, has been declared by one distinguished medical botanist to be the most poisonous of all plants. Doubtless this view is incorrect, since I have known the same thing to be said in other tropical regions of various species of *Siphocampylus* and *Centropogon*, their juices so irritant that they are frequently spoken of as being "caustic." There is record of one member of this family being non-poisonous, it being claimed that the New Zealand *Laurentia* is eaten as a pot-herb. I have little doubt that there is some error connected with this report. I should expect to be poisoned were I to eat this plant.



Lobeliaceae.—Illustrates *Siphocampylus*, which is very similar to *Lobelia*. The corolla is fissured and through the fissure projects the coherent anthers which are well shown in *B* and *C*. *E* shows the calyx-tube adherent to the ovary. *D* shows the two stigmas and *F*, a cross section of the pod.

Aside from its toxicological interest, this family, carefully used, is capable of great medicinal utility, the properties being uniformly those of our *Lobelia inflata*.

The more powerfully poisonous division of this family is distinguished by its ascending or centripetal inflorescence, irregular corolla, almost always fissured on the upper or inner side, and its anthers, usually also its filaments, being connate and irregular. Its calyx tube is always adnate. Recognition is easy and certain.

THE LEGUMINOSAE OR BEAN FAMILY.

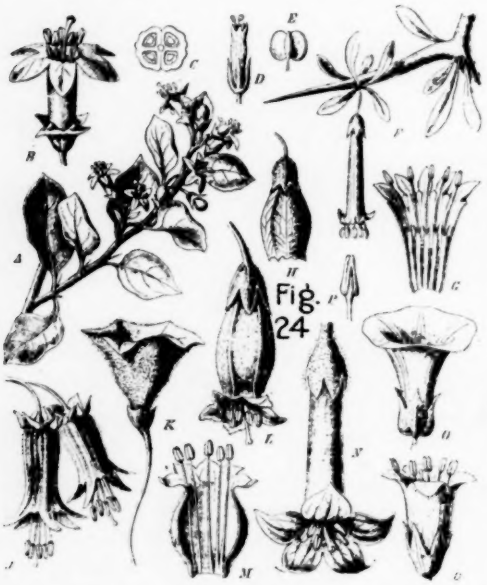
In this instance, I include all three of the sub-families, now regarded by most botanists, myself included, as being separate families. It is quite useless to attempt to generalize as to the medicinal or poisonous properties of so diversified a group. My only object in referring to them here is to indicate their dangerous character. To those who know only the few and mostly small plants growing wild in our region, the most of them so harmless as to constitute important fodder plants, this statement may seem unwarranted, but those who know of the vast extent and abundance of this family in the tropics, where they largely compose the forest growth, will know that the statement is not an exaggerated one. The seeds of this family, and in many cases the seed-pods and foliage also, are highly albuminous and nutritive and may in emergencies be sought as food, as I have myself sought them and with great advantage. The difficulty is that, as in the case of the calabar bean, the wild lima bean and the locoweed, they often contain subtle and dangerous poisons. It must thus be regarded as an unsafe proceeding to resort to the use of any of them without some specific knowledge of their properties.

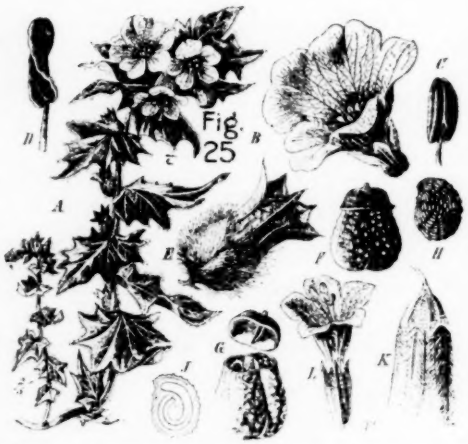
These plants are most easily recognized. Like the *Rosaceae*, they have alternate, stipulate leaves, five petals and perignous stamens. They differ from it in having but a single carpel, usually with more than two ovules, but sometimes with only one. Their leaves are usually compound. The botanist who has become at all familiar with the family however, invariably recognizes it at sight without requiring recourse to technical characters.

THE SOLANACEAE OR POTATO FAMILY.

Although widely separated in the vegetable kingdom from the family last considered, the two remind us in many ways of one another. Like the *Leguminosae*, the *Solanaceae* are permeated by many subtle and highly dangerous poisons, although their chemical nature is altogether different. Like the *Legu-*

minosae, the *Solanaceae* yields many important edible products and, like it, its vegetable products are quite likely to attract the traveler who is in need of food supplies. To yield to this temptation is to court disaster, as one has never any means of knowing how the experiment is likely to terminate. Even the odor and





Solanaceae.—This important family is so large and variable as to require a number of illustrations. Fig. 24 shows the characteristic flower forms, with tubular corollas, 5 alternate stamens and 2-carpelled ovary, producing a berry for a fruit; *A* to *C*, *Grabowskia*; *D* and *E*, *Oryctes*; *F* and *G*, *Dunalia*: *H*, *Margaranthus*; *J*, *Hebecladus*; *K*, *Poecilochroma*; *L* and *M*, *Latua*; *N*, *Iochroma*; *O* and *P*, *Cacabus*; *Q*, *Phrodus*. Fig. 25 illustrates the capsular-fruited division of the family, as seen in *A* to *J*, *Hyoscyamus*; *K*, *Scopolia*; *L*, *Physochlaena*.

flavor are often misleading guides, these agreeable properties sometimes being associated with highly dangerous ones.

The members of the Potato Family, so far as we are here interested in them, have regular gamopetalous corollas, stamens alternate with its lobes, alternate estipulate leaves, two-celled fruits and the carpels containing numerous ovules. The corolla is plicate in aestivation and the fruit either a berry or a capsule.

THE ROSACEAE OR ROSE FAMILY.

In connection with the astringent properties of the willow family, one may well refer to those of the rose family, the members of which are almost without exception heavily provided with tannin. I refer here of course, to the Rose Family proper, not including the *Drupaceae* or Plum Family, nor the *Pomeaceae* or Apple Family. Through the Raspberry, Blackberry, Strawberry, Potentilla, Agrimonia, Spirea and many others, scientific and domestic medicine has for ages been furnished with an abundance of simple astringents of great efficacy. Since the related genera, with similar properties, are very numerous and most widely distributed, it becomes a matter of no little importance to be able to recognize the members of this group at sight. This is to be done by noting their stipulate leaves, usually compound, as seen in roses, blackberries, strawberries, etc., their five regular petals, numerous perigynous stamens, two-ovuled, mostly distinct carpels and style arising laterally from the ovary.

Only a word need be said in conclusion regarding the several families grouped under the old name *Coniferae*. Everyone is able to recognize any member of this group at sight and their medicinal and poisonous properties are too well known to call for any discussion.

BRAZILIAN JALAP.*

BY WILBUR L. SCOVILLE.

In 1915 a brief article was published in the *Pharmaceutical Journal*[1] of London by E. W. Holmes stating that Brazilian jalap had been for some time imported into Germany and used as a cheap source of resin of jalap. He had therefore procured some of the drug, which was identified as the root of *Piptostegia pisonis* and was examined chemically by Dr. F. W. Passmore. The latter found that the root contained over 20 percent of resin which answered to the U. S. P. & Ph. Br. tests for true resin of jalap, but only 85 percent of it was soluble in ether, and it contained 8.9 percent of ash.

A search of pharmaceutical and chemical literature has failed to disclose any further account of this drug or its chemical composition. Accordingly a small amount was procured from Brazil and examined as follows:

Forty grammes of the ground drug was exhausted with 95 percent alcohol in a Soxhlet apparatus and the tincture diluted to 200 mils. This tincture yielded 7.04 percent of dry solids equivalent to 35.2 percent of extractive in the drug, and on subjecting it to the U. S. P. method of assay for resin of jalap, gave 5.64 percent of resin in the tincture, equivalent to 28.2 percent in the drug. The resin was a light buff color, slightly hygroscopic, and it melted under boiling water.

Five hundred grammes of the drug was then extracted with alcohol, the tincture was concentrated by distillation to a syrupy liquid measuring about 180 mils, and this was poured slowly into about 7500 mils of cold water containing a little hydrochloric acid. The resin precipitated at first in a fine powder but quickly agglomerated into a sticky mass at the bottom of the jar. It was washed several times with water, then collected and dried, yielding 132.5 Gm. of resin, equivalent to a 26.5 percent yield from the drug.

Portions of this resin were shaken with petroleum benzine, benzol, ether, chloroform, and acetone, and the clear liquids evaporated. By this method it was found that 3.7 percent was soluble in petroleum benzine, 5.3 percent in benzol, 5.9 percent in ether, 19.55 percent in chloroform, and 99.4 percent in acetone. It was nearly all soluble (97.5 percent) in a 1 percent solution of potassium hydroxide, and the addition of acid to this alkaline solution did not reprecipitate the resin.

On shaking 1 Gm. of the resin, mixed with 5 Gm. of washed sand, with 100 mils of distilled water for several hours at room temperature, and filtering, 0.535 Gm. was found to be dissolved by the water. This is a remarkable solubility for a resinous body, and probably accounts for the fact that it could not be precipitated as a powder, even in ice-cold water, but always separated as a soft, sticky mass. On ignition the residue yielded 0.5 percent of ash—considerably less than was obtained by Doctor Passmore.

The acid number, as obtained by the U. S. P. process, was 23.1 and the saponification number was found to be 141.6. An alcoholic solution of the resin gave no color with a solution of ferric chloride and did not reduce Fehling's solution. But on heating the alcoholic solution with sulphuric acid a strong odor of valeric acid appeared and the neutralized liquid reduced Fehling's solution, showing that the resin is of a glucosidal nature.

Two grammes of the resin dissolved slowly in 10 mils of ammonia water, producing a cloudy but limpid solution, and the addition of an excess of hydrochloric acid did not precipitate the resin.

Since the U. S. Pharmacopoeia requires that not more than 12 percent of the resin of jalap shall be soluble in ether, and not more than 30 percent soluble in chloroform, this resin of Brazilian jalap will meet the U. S. P. requirements except as to solubility in water and the acid-resin test, which it slightly exceeds. Even

* Read before Scientific Section, A. Ph. A., Chicago meeting, 1918.

[1] *Pharm. Journal*, 1915, page 671.

the water-solubility test is greatly changed by the presence of a little acid, and the addition of acid to the clear aqueous solution produces a marked precipitate. Probably the temperature also affects the solubility markedly, since hot water dissolves it more readily. To further ascertain its character 100 Gm. of the resin was treated successively by percolation with petroleum ether, ether, chloroform and acetic ether.

The petroleum ether extract yielded 2.09 Gm., and was a reddish, oily, viscid liquid, mostly soluble in alcohol and having a markedly acid reaction. It's acid number was 12.9 and the saponification number 116.

The ether solution yielded 2.376 Gm., was solid and of a buff color, resembling the original resin, had an acid number of 82.6 and a saponification number of 62.5.

The chloroform solution yielded 2.424 Gm., was solid, crystalline and showed an acid number of 19.1 and a saponification number of 58.5.

Acetic ether dissolved all of the remainder of the resin, and this portion gave an acid number of 16.8 and a saponification number of 161.3.

All these extracts therefore contained free acids, the ether solution being richest in them, and also fatty esters.

Comparing these with an investigation of resin of jalap by Frederick B. Power and Harold Rogerson (International Congress of Applied Chemistry, 1909), an investigation which was very complete, and which established the very complex character of resin of jalap, they found the following:

Soluble in petroleum ether	1.9 percent
Soluble in ether	9.7 percent
Soluble in chloroform	24.1 percent
Soluble in ethyl acetate	22.0 percent
Soluble in alcohol	38.8 percent

The above were obtained by successive treatments, and represent the percentages which were dissolved after the preceding solvent had been employed.

Solubility results are not directly comparable unless obtained under identical conditions and with the same amounts of solvents. Presumably the above solubilities were obtained by extracting the resin, previously mixed with purified sawdust, in a Soxhlet apparatus, using the solvents successively. This would result in a thorough extraction of all substances which are soluble in the particular solvent used. In my work the powdered resin was simply shaken for several hours with about four times its volume of the solvent, the latter decanted, and the resin rinsed with fresh portions of solvent. In this method only the more readily soluble constituents would be extracted.

It is evident, however, that the Brazilian resin is less soluble in ether and much more soluble in ethyl acetate.

On analysis of the various fractions of the resin, Power and Rogerson found formic, acetic, butyric, valeric and other higher volatile acids, also palmitic, stearic and convolvulic acids, and by hydrolysis azelaic and sebacic acids, and a new acid which they had previously found in the root of *Ipomoea purpurea*, and which they called ipurolic acid.

The neutral bodies found were cetyl and ipurganol alcohols, a physosterol, beta-methylaesculetin and glucose, the latter showing the glucosidal nature of the resin.

I did not attempt so complete a separation of the constituents of Brazilian jalap resin, but formic and valeric acids were recognized by their odor and the

former was identified by chemical tests, glucose was produced by hydrolysis with sulphuric acid and the ready saponification of some of the fractions strongly suggested stearic or similar acids. If ipurolic acid could be separated and identified, the chemical similarity of the two resins would be established.

In their work on *Ipomoea purpurea* Power and Rogerson separated this acid as follows:

> The resin was hydrolyzed by heating in alcoholic solution, containing enough sulphuric acid to make a 5 percent acid solution, for four hours under a reflux condenser. The alcohol was then removed, and the hydrolyzed resin distilled with steam. When the liquid in the still had cooled, the acid separated in fine, interlaced crystals from the aqueous fluid and was collected by filtration. It was found to be readily soluble in a weak solution of sodium hydroxide, and after rendering this acid with acetic acid the crystalline body was extracted with chloroform. To further purify it, it was again crystallized from hot water, in which it is slightly soluble. The melting point was then found to be 101° C.

On applying this process to the resin of Brazilian jalap, an acid body separated in the still and was purified by dissolving in weak sodium hydroxide solution and extracting with chloroform after acidulating. On recrystallizing from hot water it was obtained in colorless condition and had a melting point of 83.5° C. Further purification showed no change in the melting point.

It combined readily with weak alkalies, and had a saponification value of 174, as found by direct titration in alcoholic solution with decinormal alcoholic potassium hydroxide. This is a lower saponification number as well as a lower melting point than that of ipurolic acid. It is therefore a different body, but it is obtained in the same way, and does not correspond to any of the commonly known organic acids.

The resin of Brazilian jalap is thus shown to be similar in chemical character to that of *Exogonium Purga*. It is a complex body of a glucosidal nature, and contains constituents of like character. This resin meets the U. S. P. requirements for resin of jalap except that of solubility in water and the acid number. The yield is three to four times as great, and the physiological action is similar.

LABORATORY OF PARKE, DAVIS & CO.,
DETROIT, MICH.

KARAYA GUM, A SUBSTITUTE FOR TRAGACANTH.*

BY CLARE OLIN EWING.

The commercial value of a gum depends largely upon the purpose for which it is best suited, the most valuable generally being those varieties suitable for sizing silks and for use in confectionery and pharmacy. For pharmaceutical use the desirable qualities are a fairly high viscosity, suitable adhesive power, and freedom from appreciable odor, color and acidity. One of the gums which admirably fulfills these requirements is gum tragacanth, which is highly prized by pharmacists and is official in most pharmacopoeias. It is defined by the United States Pharmacopoeia IX (1916) as "The spontaneously dried gummy exudation from the stems of *Astragalus gummifer* Labillardiere, or from other Asiatic species of *Astragalus* (fam. *Leguminosae*.") Gum tragacanth belongs to the class of gums

* Contribution from the Pharmacognosy Laboratory, Bureau of Chemistry, Department of Agriculture, Washington, D. C.

which swell in water and form jellies, and upon addition of more water, form thick, transparent mucilages.

Recent examination of samples of gum tragacanth offered for importation has disclosed that in some instances foreign gums have been substituted for the true material. The samples in question were not obtained from the official source, but were of the type obtained chiefly from *Sterculia urens* Roxburgh, and also from *Sterculia villosa* Roxb., *Sterculia tragacantha* Lindley, or from *Cochlospermum gossypium* DeCandolle, and other species of *Sterculia* or *Cochlospermum*. These gums have recently been imported under the names of Indian, Karaya, Kadaya and Maura gum. Owing to the large number of dialects spoken in India, they have been known by a wide variety of vernacular names. According to Dymock[1] and to an anonymous writer in the Scientific American[2] they have also been variously known by the names Bali, Gulu, Kahu, Kalru, Kalu, Kandul, Karai, Katila, Katira, Kavali, Kawali, Kutera, Kuteera, Kutira, Loli, Pandruk, Penari, Shiraz, Tabsu, and Velley-putali. The names most common in this country are Indian gum and Karaya gum. We consider the latter name preferable to Indian gum, especially in view of the fact that the term "Indian Gum" has been applied to a number of different gums. The Indian gum (*Gummi indicum*) of the British Pharmacopoeia is obtained from *Anogeissus latifolia* Wallroth, and belongs to the acacia series of gums.

Karaya gum belongs to the tragacanth series of gums, and in the powdered state may readily be mistaken for true gum tragacanth. It is reported to exude from the trunk in large quantities. In the whole state it occurs in irregular, rounded, translucent lumps of a pale buff color; it is said never to occur in the ribbon-like whitish or light brown bands characteristic of true tragacanth. It may be differentiated from tragacanth chemically and macroscopically by a number of tests given in the United States Pharmacopoeia IX,[3] where it is referred to as "Indian Gum" in the tests of purity of gum tragacanth, and also by its "volatile acidity"[4] which is about eight to ten times as great as that of tragacanth.

Although, according to Guibourt[5] the fresh gum is inodorous, when it is exposed to moist air it gives off an odor of acetic acid. Robinson[6] has shown that the volatile acidity of gum from *Cochlospermum gossypium*, when hydrolyzed with phosphoric acid and distilled, corresponds to about 14 or 15 percent of acetic acid. Emery[7] has examined 56 samples of gum tragacanth, some of them authentic specimens obtained from Turkey and Persia, and has shown that the volatile acidity corresponds to about two or three percent of acetic acid only, while the acidity of gum obtained from *Sterculia urens* (21 samples) corresponds to about 16 percent of acetic acid. The similarity in the results of Emery and Robinson are noteworthy and suggest the close similarity of *Cochlospermum gossypium* and

[1] Dymock, Warden and Hooper, *Pharmacographia Indica*, I, 228 (1889–90).

[2] "What is Karaya Gum," *Scientific American Supplement*, 2137, 82, 393 (1916).

[3] These tests are apparently based upon the work of Scoville, *Drug. Circ.*, 53, 116–7 (1909).

[4] "The Volatile Acidity of Gum Tragacanth Compared with that of Indian Gum;" U. S. Department of Agriculture, *Bureau of Chemistry, Circular* 94, 3 (1912).

[5] "Histoire Naturelle des Drogues Simples," 3, 454 (1876).

[6] "The Gum of Cochlospermum Gossypium," *Journal Chemical Society Transactions*, 89, 1496–1505(1906).

[7] *Loc. cit.*

Sterculia urens. Cooke[8] has indeed suggested that *Cochlospermum gossypium* has incorrectly been separated from the *Sterculiaceae*.

When moistened with water, karaya gum absorbs a large quantity and, like tragacanth, swells to several times its original size, forming a tasteless, nearly colorless mucilage. A 1 percent mucilage prepared by the writer from a good grade of karaya gum had a viscosity similar to that of a mucilage of tragacanth of about three-fourths the same concentration; a 1.5 percent mucilage of karaya was comparable to a 1 percent mucilage of tragacanth. The adhesiveness of a 1 percent mucilage of tragacanth was superior to that of a 1 percent mucilage of karaya gum.

Prebble[9] states that: "From some comparative experiments made with codliver and castor oils it appears to be about equal to tragacanth as an emulsifying agent." Flückiger,[10] speaking of a similar gum from the related African species, *Sterculia tragacantha*, states that "as a means of promoting the adhesiveness of pilular masses I find" it "as advantageous as ordinary tragacanth," and also that "the African *Sterculia tragacantha* may be used both in pharmacy and in the arts instead of the usual drug of Asia Minor."

Maiden states[11] that the "uses of the gum are very limited; * * * From time to time samples have been sent to Europe for valuation but hitherto no use has been found for it and consequently it has no appreciable value in the markets. The only purpose for which it has hitherto been considered valuable is as an adulterant of tragacanth, but hardly as a substitute."

On the other hand, Dymock[12] states "Karāi gond [Karaya gum] is used as a substitute for tragacanth and is issued from the [British] government stores."

Maiden did not appear to have a very good opinion regarding the possibility of karaya gum in the arts, but his work was done nearly thirty years ago at a time when even tragacanth was not as widely used in the arts as at the present time, and when the possibility of the use of karaya gum for technical uses had not been developed to any extent. Maiden, furthermore, refers to Cooke[13] who, he states, found it to be valueless as a result of his experiments. Reference to the original, however, shows that Cooke's "experiments" consisted in the submission of several samples to commission merchants, who based their statements as to its lack of value upon mere inspection, unsupported by any chemical data or practical experiments.

Karaya gum is used extensively in India as a substitute for tragacanth in the preparation of sweetmeats, and also locally as a demulcent in the treatment of throat affections. The poorer grades are used very extensively in this country by calico printers. As an emulsifying agent karaya gum appears to be of value as a substitute for tragacanth, although from one-third to one-half more should be used, but on account of the slight acidity of karaya gum its use in certain prepara-

[8] "Report on Gums and Resins of India," 31 (1874).

[9] *Loc. cit.*, 230.

[10] "On African Tragacanth," *Pharmaceutical Journal*, [2] 10, 641 (1869).

[11] "Sterculia Gum; Its Similarity and Dissimilarity to Tragacanth," *Pharmaceutical Journal*, [3] 20, 391–27 (1839).

[12] "Notes on India," *Pharmaceutical Journal*, [3] 8, 161 (1877).

[13] *Loc. cit.*

tions may be objectionable. In general, however, this characteristic should not militate against its use as an excipient for pills and troches.

As may be seen from the foregoing, although inferior to tragacanth, karaya gum does have valuable characteristics, and its use for legitimate purposes should be encouraged. It is now selling for one-fourth to one-fifth of the price of tragacanth, and on account of its cheapness it is now being used rather extensively in the arts as a substitute for tragacanth. Karaya gum is considered especially worthy of the attention of pharmacists at this time because solutions of tragacanth and other gums[14] are being recommended in quite a number of preparations as substitutes for glycerin, which is now in very large demand for war purposes.

CONSERVATION IN PHARMACY.*

BY A. R. L. DOHME.

These are abnormal times in which we are living, and standards of all kinds have been changed to meet the conditions set by a war which has no standard by which to measure it—exceeding in extent, intensity, destruction and influence on the entire world and everyone in it, that of all previous wars combined. The aim of the war now existing for about four years has been general and mutual destruction of all things. The magnitude of the operations and the world-wide nature of the same has taxed the resources of all nations to the limit. In money, the yard-stick is now billions—a figure previously only relegated to the imagination. In steel, ships, copper and explosives, the yard-stick is nation's entire output; in men, clothes, sugar, flour, cereals and foodstuffs, the yard-stick is the utmost capacity of the earth's productivity and the man power of the earth to supply and produce it. All laws are continually changing and freedom of action, thought or belief no longer exists anywhere on the earth. The press now rules the world and creates not only sentiment, position, influence and power, but holds in the palm of its hand the destinies of life of all peoples and individuals. Absolutism and terror now reign supreme all over the earth. It has become the solemn and serious duty of this great country of ours to step into the breach of the European cataclysm and holocaust and by the power of its manhood, the sacrifice of its people, the use of its vast resources in money and materials and the throwing into the balance of its determination, ingenuity and persistence, stay the onslaught of the Teuton columns and save the world from the rule of autocracy and might, thereby preserving for mankind the institutions of liberty, freedom and the pursuit of happiness. Without our intervention the cause of the Allies would have been lost. What a glorious opportunity for the land of the free and the home of the brave to come to the rescue of a tottering world about to fall a prey to Junkerism and the Divine right of kings. It hence becomes our duty, each and everyone of us, to do our share in every way we can by putting our shoulder to the wheels of the car of liberty and help it arrest the advance and eventually

[14] Anon. "War Emergency Formulas," *Lancet*, 193, 766 (1917). Smith, "War Emergency Formulas," *American Druggist*, 66, 51–3, 102–4, 145–9 (1918). Wimmer, "Emergency Substitutes for Sugar, Syrupand Glycerin," JOURNAL AMERICAN PHARMACEUTICAL ASSOCIATION, 7, 39–46 (1918).

* Read before Section on Commercial Interests, A. Ph. A., Chicago meeting, 1918.

smother and destroy the car of Juggernaut, led and kept going by the war party or lauded aristocracy of Germany. Our share is to supply the medicines needed to cure the sick, heal the wounded and sustain the well, as well as to conserve all resources that enter into our lives and our business activities. Let us remember, however, that we must not sacrifice our main vocation and duty, which is the supplying of medical supplies, or in any way weaken or hamper it, by a false conception of a so-called patriotism claiming to conserve our needed raw materials for said medicinal agents.

Some ill-advised persons have apparently, under the guise of said so-called patriotism, appealed to the drug trade to change its formulas of medicines so as to conserve sugar, alcohol and glycerin. Assuming that these persons meant well and were not actuated by a desire to shine as patriots, so-called, I am prepared to prove and am therefore going to assert that their plea for conservation of these three important ingredients of medicines was impossible and in fact, dangerous. In the first place, these products are subject to Federal laws which are an integral part of the statutory law of the land and they cannot hence be altered without subjecting the maker of the product to the penalties of the law. In the second place, a change of formulas established after many decades of experience and study would, beyond question, subject the preparations to change in strength and keeping qualities that might and probably would render them of doubtful value. This probably would endanger the lives of both our soldiers and our civilians and this is something no patriot so-called nor a real patriot would or should dare to do. No chemist or pharmacist to-day can definitely say or determine without prolonged study and observation to what extent a reduction of alcoholic or glycerin strength will alter and depreciate the value or the utility of a medicinal preparation. The whole question was discussed at a hearing held by the U. S. Food Administration at Washington, attended by many of the experts of the Government including Doctors Alsberg and Kebler and by the writer and Dr. Frank R. Eldred, on behalf of the pharmacists of the country. It was first shown that there is no need to conserve alcohol any way, as there is more than enough for all needs for years to come, without considering at all the vast stores of damaged corn all over the land seeking sale for conversion into alcohol, as it is not fit for food. Next it was shown that the amount of sugar used in medicines is less than half of one percent of the amount used in the confectioner's trade alone. Since the latter is certainly a far less essential industry than medicines, whatever conservation of sugar that may be needed beyond that conserved in family use should come from the candy business and not from the drug business. Therefore sugar and alcohol were by mutual consent unanimously eliminated from the materials to be conserved in the preparation of medicinal preparations. When it came to glycerin it was found that the amount of glycerin used in the drug trade was an appreciable percentage of the amount made and used in this country. Thereupon the representatives of the drug interests at once volunteered to undertake a study of the preparations containing glycerin with an eye to reducing the amounts of this substance used in medicinal and toilet preparations. Undoubtedly toilet preparations are less essential than medicines and undoubtedly conservation should be had in toilet preparations before medicinal preparations are changed. At this point of the hearing Doctor Alsberg entered a strong protest against changing any

medicinal formulas except as a last resort and maintained that before such a determination is reached by the Food Administration, other less essential industries using glycerin should be appealed to and requested or instructed to curtail or replace their glycerin. As the Government executive to enforce the Pure Food and Drugs Act, Doctor Alsberg stated that he would protest against changes in official formulas because he would not assume the responsibility incurred by such changes, affecting as they might the lives of our boys in the trenches fighting for us the great battle of human liberty and freedom.

Summed up, therefore, there is no occasion to conserve sugar or alcohol in medicinal preparations and there may not be in conserving glycerin; but if this association desires to do its bit in a useful and practical way, it might name a committee, perhaps called a Conservation Committee, and authorize or instruct it to work upon all official preparations as well as non-official preparations containing glycerin with an eye to reducing the amount of glycerin used in the same. This might also be extended to toilet and cosmetic preparations. There are doubtless some preparations that contain too much glycerin, or rather more than they actually must contain in order to be efficient and permanent. The Allies have recently called upon Uncle Sam for twenty million pounds of glycerin for the remaining six months of this year, which is a material increase over former estimates. Whatever they need to win this war and we can possibly supply, we must strain every nerve to supply, and therefore glycerin conservation may be demanded of us before the end of this year.

DISCUSSION.

A. R. L. DOHME: I was requested by your Chairman sometime during the past year to present the result of a hearing which was given by the United States Food Commission on the question of conservation of alcohol, glycerin and sugar. Concerning these there had been much propaganda spread over the country, rather disturbing to the drug trade in general, particularly as to recommendations looking to the changing of many of our imported formulas with alternatives, given more less at haphazard, and therefore fraught with a little bit of uncertainty and risk, we thought, to the practical interests of the country. In this paper I have endeavored, in a general way, to give you the result of that conference.

J. P. SNYDER: The subject of glycerin conservation is something that I have done some work on. I have been somewhat surprised to find that glycerin did not play such an important part as a solvent as I had been led to believe. I made experiments with camphorated tincture of opium, preparing the tincture according to the U. S. P. formula; also another, leaving out glycerin. Practically the same results were obtained; the analyses checked up very closely.

I also made experiments with ipecacuanha and, according to the results of these experiments, we may conserve glycerin in some of the preparations of this drug.

H. V. ARNY: Mr. Snyder's information is along the same line of a conversation which I had with Mr. Scoville yesterday. He had been experimenting along the same line. We certainly want, as far as possible, to conserve glycerin in preparations wherein it is not essential.

CHAIRMAN R. P. FISCHELIS: You will recall that Doctor Dohme suggested that it might be well for the Association to appoint a Conservation Committee. Will the Section take some action thereon?

H. V. ARNY: I would move that such a committee be appointed.

A. R. L. DOHME: I am very glad this action has been taken by this Section, because, if we are going to make a strong effort at Washington for the recognition of pharmacy, in which the American Pharmaceutical Association is naturally going to be prominently mentioned, our desire to coöperate with the Government in conservation will help us in our efforts to secure recognition.

You recall, some of you, that were at the meeting yesterday, that Col. Raymond, of the U. S. Army Medical Supply Bureau, gave us a very interesting talk on the pharmacists in the United States Army. While I am not endeavoring to repeat to you exactly what he said, I will say this much, that he said: "If you expect to gain recognition in the United States Army, I think you should be guided by the same methods that the dentists used. The dentists, eight years ago, were in the same condition that you are now, when I addressed their National Association as I am now addressing your National Association, and to whom I said, that if they made themselves indispensable to the Army their recognition would come, and if you make yourselves indispensable and show that your services are as important as many other services to the Army in more ways than one and in as many ways as possible, your recognition will come." It seems to me that this is one method by which we can show our services are indispensable, namely, that we are trying to conserve something that the Government needs.

CONCERNING THREE CARDINAL POINTS IN PHARMACY.*

BY B. E. PRITCHARD.

With half a century to my credit in the pursuit of Pharmacy, I trust that it may not be considered impertinent to mention a few points pertaining thereto that seems to be susceptible to improvement.

When I entered upon this long period of what has proved to be my calling in life, there was nothing of what is now most properly denominated "Prerequisite Attainments" to measure up to before one could cross the threshold of pharmacy. My only attainments consisted of several years' experience as a newsboy on the streets of Pittsburgh, and a very limited attendance at the public school in my home district. At that time the word "Drugs" over the door of a place of business did not produce any greater impression upon the public mind than did that of a grocery, hardware, dry goods, or any of the other myriad stores that lined the public thoroughfare of any town or city. The drug store was simply a store and to the passer-by did not differ from any other store except in the matter of odor, which in those days was much more pronounced than now. It was just about that period in the evolution of things when mystery was beginning to detach itself from the drug business. The gobular containers of various colored liquids were still in evidence and their brilliant flashes of light illuminated an occasional corner of a street. I say "occasional" in this connection, for the reason that drug stores were not so thickly strewn as we find them in these days. The title of "Pharmacy" was but seldom given, "Apothecary Shop" being the popular synonym, then most largely in use.

But perhaps all these preliminary remarks may have no interest for you, however much they mean to me as I recall my first introduction into the practice of pharmacy. The purpose I have in mind, however, will become apparent as I proceed to show how unprepared my mind was, and how poorly equipped was my brain to assimilate the complexities and deep things that pertain to the study of pharmacy and the branches of knowledge that necessarily go hand in hand therewith. Through all the years that have gone since my first entrance upon the practice of pharmacy, my ignorance of fundamentals has constantly been "a thorn in the flesh" and has proved a serious handicap in the way of my advancement. Hence, with my own experience to guide me, I feel it my bounden duty

* Read before Section on Education and Legislation, A. Ph. A., Atlantic City meeting, 1916.

upon every opportunity that presents itself to say to any young man who contemplates taking up pharmacy as his life work, "Be sure that you have had yourself properly prepared by sufficient preliminary education to be able to grasp intelligently the problems that will confront you every day after you have taken up the duties of your calling, and solve them yourself, guided by your own knowledge." What constitutes proper knowledge and how is it obtained? Time, patience, experience and a capacity for assimilation alone can bring one to a state of *almost* perfection, but no man ever fully gets there, although he is constantly adding to his attainments. Therefore I consider the most important and essential cardinal point, and the one most worthy of emphasis, is Sufficient Preliminary Education.

"What is it to be wise?
'Tis but to know how little can be known.
To see all others faults, and feel your own."

I am convinced that thorough knowledge of the theory of pharmacy and wide instruction in all the branches of education that come in the curriculum of a good college of pharmacy are essential—and no student should be given his diploma who has not shown himself capable of reaching the passing mark—yet, unless the student has been given the opportunity to familiarize himself with these teachings by coming into actual contact with them in the presence of the customer, all these will count for naught in the making of a competent pharmacist. Practical Experience is an absolutely necessary prerequisite in order to apply the knowledge which has been gained through lectures and the study of text-books. College training alone fails to make a person a success in business life; one must come into direct contact with the actual thing itself if he would feel himself thoroughly rounded out and ready to grapple with the problems that continually arise in his vocation. With what has already been said in mind, there can be but one answer to the query—"Who should be authorized to distribute medicines of any and all character?" Those only who by careful study and conscientious attention have properly qualified themselves for that duty. To knowledge must be added practical experience. To obtain such experience requires much time and long, patient, watchful waiting upon the methods and practices employed by those who have been our preceptors, who in turn have themselves been trained by others qualified to impart the necessary knowledge.

You ask how long it would be safe to leave one's assistant alone to grapple with the exigencies of every-day life in a pharmacy. Pretty hard question to answer, isn't it? Does two years' experience in the average drug store seem a satisfactory reply to this query? That is the standard that has been set by those men who have formulated most, if not all, of the pharmacy laws of the several states. Let me quote from one of these statutes which constitutes a fair sample. "Those applying for examination for certificates as qualified assistants therein must produce evidence of having not less than two years' experience in said business." What is meant by the words "said business?" The same statute will tell us that, it reads: "All persons who desire to become pharmacists must produce satisfactory evidence of having had not less than four years' practical experience in the business of retailing, compounding or dispensing of drugs, chemicals and poisons, and of compounding physicians' prescriptions;" and, furthermore, "of

being a graduate of some reputable and properly chartered college of pharmacy;" and still further, "must produce satisfactory evidence of having had not less than two years of high school training, or pass an examination equivalent thereto." And yet, after having successfully fulfilled all these preliminary requirements, and then successfully made the required 75 percent passing mark before the pharmaceutical examining board, the pharmacist can, under the pharmacy law, leave his business temporarily in care of one who has managed to emerge safely from a pharmaceutical board examination with such meagre knowledge as he may have been able to grasp while being employed, in any capacity, in a drug store for two years. Does the absurdity of the situation dawn upon you? Apart from his being a convenience to the pharmacist, has the assistant pharmacist a recognized position of value under our pharmacy laws? Is the public amply protected under the present requirements for registration of qualified assistants? Is he qualified? Is it worth while to continue provisions for his registration? Yes, but under more amplified prerequisite requirements than those that now obtain, which are but little removed from being farcical. Have I succeeded in making it apparent that a third cardinal point in pharmacy should by all means be Intelligent Service Always?

Sufficient Education, Practical Experience, Intelligent Service—given these three cardinal points, coupled with honesty, sobriety and a clean conscience, no man can fail to make his life a success.

MORE CONSISTENT PHARMACEUTICAL STANDARDS.*

BY FREDERICK J. WULLING.

Why camouflage any longer in pharmaceutical, educational and practitional standards? Camouflage is a deception in favor of self-interest and is only justified as an expediency toward a right and righteous end. It is of two sorts: affirmative and negative. The affirmative is the justifiable kind. Nature indulges in this kind when it gives arctic animals white fur and the beasts of the tropic stripes and spots to make them one with the snowdrift and the jungle, respectively. The tree toad is of the color of the bark of the tree and green insects blend with the foliage. Nature's camouflage is intended to protect and preserve life and is therefore good. This idea has been applied to modern warfare. To deceive the camera and the telescope of the aviators and observers has become one of the chief aims of the firing line. Negative camouflage is the kind that is without affirmative results. It often produces the opposite.

In failing to adopt higher educational standards, except in spots, has not pharmacy camouflaged itself negatively? Hasn't the great body pharmaceutic deceived itself in believing its present standards high enough? Ought it not derive a lesson from the fact that medicine and dentistry, so akin to pharmacy, have prospered so significantly of late because of their accelerating educational standards? Does the fact that professional pharmacy has suffered dilution and attenua-

* Read before the American Conference of Pharmaceutical Faculties and the joint session of the Section on Education and Legislation, A. Ph. A., the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties.

tion through commercial activities, make a continued passive attitude toward standards commensurate with the times and with the responsibility of pharmaceutical practice, justifiable or wise? Does the pharmacist who dispenses five prescriptions a day need to be less safe and reliable than the one who devotes his full time to professional practice? Is it defensible that the physician who treats five patients a day be less qualified than the one who attends fifty daily? May the railroad engineer who runs a train fifty miles be less able and reliable than the one who runs a train through an entire division? The pharmacist, the physician, the engineer in each case needs the fullest measure of qualification irrespective of the service each gives quantitatively in his respective field of work. With higher standards go higher aims and purposes and proportionately better service. The higher the standards of a calling, the higher is the grade of those it attracts as its practitioners and trustees. I maintain that as pharmacists we are the trustees of our calling, morally obliged to administer upon it with the highest degree of efficiency and to hand it down to the next generation in a greatly improved condition. That is the method whereby civilization grows and evolves. Development and progress go forward through and by the highest degree of efficiency and achievement of the living generation, not by the measure of the mediocre. This fact is so self-evident that it hardly needs statement and yet, as a whole, the body pharmaceutic has camouflaged itself negatively concerning it. If in the past professional ideals and forethought had been more universal among pharmacists, standards would have increased more rapidly and the insidious aggression of commercialism would not have been possible. Commercialism is right and good and just as respectable as professionalism if in its place and if recognized as such. This fact is being increasingly recognized not only by the advocates of pure pharmacy, but also by the ultra-commercialists, who probably through economic allurement have entirely banished pharmacy from their establishments, thus creating the so-called "drugless drug stores" and releasing a certain amount of professional pharmacy to others.

The firmer establishment of professional pharmacy (it is regrettable that the phrase "professional pharmacy" must be used; the word "pharmacy" ought to imply without qualification a professional activity) is evidenced in every large center of population by the increasing number of ethical pharmacies and laboratories. This transition is under way, but needs for more momentum the assistance and encouragement of higher educational and, therefore, basic standards. These standards can be achieved only by their advocates. The advocates must do more missionary and constructive work and must utilize every legitimate agency toward the desired end, otherwise forces outside of pharmacy will step in and compel proper standards as has already been done in the State of Illinois. The work must be done by individuals and by organizations. The organized avowed advocates of higher standards are the American Pharmaceutical Association, the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, named in the order of their establishment, in a happily increasing measure the National Association of Retail Druggists and many State and other associations.

Of these the National Association of Boards of Pharmacy is the most logical and powerful to bring about needed results. In the past the Boards have not,

as a whole, been conspicuous in endeavors to raise standards. Since their organization into a national body, progress is everywhere noticeable. I feel certain that Boards are made up of men whose majority want better things for pharmacy and who are open to suggestion and conviction. The Boards are the only agencies established by law with power to fix legal, educational and practitional standards. The standards fixed by them taken together are too low. The mistake that the Boards have made and are making is a serious one and possibly may be construed as a dereliction of duty on part of the Boards in that they created standards largely representative of commercial pharmacy when in fact the legislatures creating them had in mind solely the regulation of the practice of professional pharmacy. Boards of pharmacy are only in the remotest degree related to commerce. No act creating any of the Boards can possibly be construed otherwise. Legislatures would be perverting their powers and functions if they intended otherwise. It is clear, beyond any possible doubt, that boards of pharmacy were created practically exclusively to fix pharmaceutical, educational and regulative standards enforceable at law and thus to regulate not commercial but professional practice. The Boards have absolutely no jurisdiction over the so-called commercial practices of pharmacists. They are powerless to enforce the law against pharmacists, except in its relation to professional practice established by statute. All this has not been sufficiently appreciated and understood, it seems to me, and hence the standards created by the Boards have been in the nature of a compromise when they should have been unequivocably based upon the ethical and professional activity of pharmacists.

The powers of the several Boards should possibly be increased in some respects by the respective legislatures, but it is my opinion that the Boards now have the power to require a four-year high school training of all applicants for licensure and that the great majority, if not all, have the power to require a college training in pharmacy. I have never heard any sufficient reasons why the Boards have not established adequate standards. Members of Boards have dogmatically expressed the opinion that the colleges should establish the standards. The fact is that whatever higher standards there are have largely been created by the colleges and against great odds, but the colleges have not and never can have legal powers to fix standards subject to enforcement by law. The Boards have this power. Some college entrance and graduation requirements are comparatively high now, but none are high enough. It is putting the cart before the horse to expect the colleges to establish enforceable standards. They are powerless to do this, and because of the great variance in the standards of the Boards the colleges do not and can not at present have uniform requirements. *The colleges necessarily are not all of the same grade, but the Boards are wholly or quite uniform in that they all possess practically the same regulative and legal powers.* Because of this it seems to me to be their duty as well as privilege, morally and educationally as well as legally, to establish uniform and adequate standards which the colleges *would be obliged to observe.* It should be particularly noted that the Boards have the power to fix standards which not only practitional pharmacy must observe but also the colleges. On the other hand, colleges have no power to establish standards which the Boards would have to recognize. This clearly points to where the power to set standards lies. The National Association of Boards of Pharmacy is

the logical body through which the several Boards should be invited to do their duty more fully in this respect. Many uncomplimentary things have been said of the so-called second and third grade colleges. I am not their defender nor their advocate, but I recognize that in many cases they are the products of the prevailing conditions for which the Boards and other factors are more responsible than they. *The colleges and associations in most cases are the creations of the pharmacists, directly and indirectly, and are supposed to be and are helpful agencies primarily for the uplift of the calling. The Boards, on the other hand, are creations of the States for the benefit not of pharmacy, but of the people.* They are the means whereby the States attempt to protect the people against incompetent practitioners and hence they are part of the people's self-defensive agencies. They are of those parts of the State's machinery which are charged with particular functions, for the carrying out of which they have all necessary power. Some of their particular functions are expressed in the acts creating them. While some of their powers are defined, some are inherent and implied. Under these latter the Boards can and do make reasonable rules and regulations which have the force of law. Part of these rules and regulations could consistently be made to include high school and, for the near future, college prerequisites. If this were done, it would at once put the colleges on an equality, in that respect at least, and would, among other things, do away with the unprofessional and undignified, though in a few cases justifiable, competition for students. The results would be an influx into pharmacy of a better and more uniform grade of apprentices who in due time by their superior training, intelligence and judgment, would elevate the calling to a professional and intellectual standard commensurate with the dignity and responsibility of a very important division of medicine which pharmacy really is. No fear would need to be had that the number of apprentices would decrease, because it is a fact abundantly proved by experience in medicine, dentistry, engineering, law and other learned callings, including the cases of some of the colleges of pharmacy, that increased requirements attract increasing numbers of matriculants. In the case of the College of Pharmacy of the University of Minnesota, increase of the minimum course to three years has resulted in a very perceptible increase in enrollment, contrary to the predictions of many.

I hope I have succeeded in pointing out the underlying basic position and duties of the Boards, and that it will not be regarded as presumption on my part for having done so. I feel the Boards are under obligations which they have not, as a rule, fully recognized and fulfilled. Have they not been, possibly unconsciously, a deterrent factor when they should have been a leading one in the establishment of consistent and necessary basic standards? No more time and prestige should be lost, but prompt and energetic action should be collectively taken to make up for past remissness or indifference in the respect pointed out.

It should be said that the entire body pharmaceutic is partly, even largely, at fault in the matter because it has not been sufficiently interested and aggressive in the very element fundamental to the welfare of the profession and, therefore, fundamental to the welfare of those whom the calling serves. All organizations should encourage and rally to the support of the Boards in an effective and wholehearted way by every proper means at their command. It would be patriotic and loyal to do this at once. The Government has practically implied that we

pharmacists as a class are not sufficiently educated and intelligent to be recognized as among the agencies qualified to be called upon to help prosecute this terrible war. Although we deny this the implication is not pleasant to contemplate. We ought forthwith to create such standards that this blot on our escutcheon would be forever removed. Talking and commiserating about the matter will not remedy the situation. A little courage and determined and united action are the remedies. The N. A. B. P. should take the initiative and all other associations should back it up energetically, forcefully and fraternally.

Possibly I should say in closing that all this is said in the most friendly spirit. We are all bound together in the bundle of life. I merely want to be helpful.

SUMMARY OF THE PROCEEDINGS OF THE 1918 MEETING OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES AT CHICAGO, ILLINOIS, AUGUST 12–13, 1918.

BY THEODORE J. BRADLEY, *Secretary*.

The nineteenth annual meeting of the American Conference of Pharmaceutical Faculties convened at the Congress Hotel, Chicago, on Monday, August 12, 1918, with representatives of twenty-six schools in attendance. Three sessions were held, and, in addition, a joint session with the National Association of Boards of Pharmacy.

Henry Kraemer of the University of Michigan was President of the Conference for 1917–1918 and presided at all sessions of the meeting. In his presidential address he discussed several topics of interest and importance to pharmacy and colleges of pharmacy, the most prominent of which was a strong plea for two distinct classes of drug stores, the commercial and the professional, with corresponding courses in colleges of pharmacy, one preparing for the practice of commercial pharmacy and the other for the practice of professional pharmacy. F. J. Wulling of Minnesota read a paper supporting the plea of President Kraemer for two kinds of pharmacies.

After consideration of recommendations made by President Kraemer, the Conference adopted the following resolutions:

1. That a special committee of three be appointed by the incoming president to consider and report on the question of the establishment of two distinct classes of pharmacies, namely, the commercial drug store and the professional pharmacy, this committee to work with a corresponding committee of the National Association of Boards of Pharmacy, if such a committee is appointed by that organization.

2. That a committee be appointed by the incoming president to work out methods of presenting the advantages of pharmacy as a calling to high school students of the country.

3. To continue the agitation for the standardization of degrees granted by colleges of pharmacy.

The report of Secretary-Treasurer T. J. Bradley of Massachusetts showed that the Conference now has forty-six member schools, and that the finances of the organization are in a prosperous condition, there being a balance of slightly more than a thousand dollars in the treasury, with all bills paid. On recommendation of the Secretary-Treasurer it was voted to request that the proceedings of the joint session of the Conference and the Association of Boards of Pharmacy be published in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Chairman J. A. Koch made a report for the Executive Committee, in which it was shown that 58 percent of the new students matriculated in 1917 in the colleges of pharmacy of the country were graduates of high schools, or had an equal or better preliminary education, and that the other 42 percent of the new matriculants had completed one to three years of high school work. It was also

reported that the Carnegie Foundation has promised to give early attention to the question of the investigation and classification of pharmacy schools, in a manner similar to the investigation made of medical schools a few years ago.

The report of the Executive Committee also dealt with the question of military instruction for students in colleges of pharmacy and this subject was discussed at length. It appears possible that students will be allowed to enlist in a reserve army for military instruction, and it is to be the policy of the Government that they be not called for service, except in great emergency, until their college courses are completed, provided that their college work is of satisfactory quality.

The report of the Pharmaceutical Syllabus Committee was presented by W. C. Anderson of New York. This committee reported that the preparation of the third edition of the *Syllabus* is well under way, and the Conference voted to continue its annual contribution of twenty-five dollars towards the expenses of this Committee.

Memoirs of the services to pharmaceutical education of men who have passed away during the past year were presented as follows: J. P. Remington, by W. B. Day; Charles Caspari, Jr., by E. F. Kelly; A. B. Huested, by William Mansfield; and J. H. Long, by M. A. Miner.

Reports were received from the nine standing committees and from one special committee, including matter of much value, which will appear in the annual volume of the proceedings of the Conference.

The Conference voted to instruct its Secretary to communicate to the Surgeon General of the United States Army its belief in the erroneousness of a statement widely published and attributed to an officer in the Surgeon General's office, that there are but eight reputable and worthy schools of pharmacy in the United States.

The officers of the Conference elected and installed for the ensuing year are: *President*, Charles B. Jordan, Purdue University School of Pharmacy, LaFayette, Indiana; *Vice-President*, William Mansfield, Albany College of Pharmacy, Albany, New York; *Secretary-Treasurer*, Theodore J. Bradley, Massachusetts College of Pharmacy, Boston; *Chairman of the Executive Committee*, Julius A. Koch, Pittsburgh College of Pharmacy, Pittsburgh, Pa.

MAILING AMERICAN PHARMACEUTICAL ASSOCIATION JOURNALS TO MEN IN THE ARMY AND NAVY.

In reply to your letter of the 20th *ultimo*, with regard to the THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, I have to say that the arrangement under which unwrapped and unaddressed magazines intended for soldiers and sailors may be mailed by the public at the postage of one cent each is applicable only to such publications as constitute magazines within the ordinary meaning of that term, that is, magazines devoted to literature or containing articles of general interest, and not to newspapers or other publications devoted in the main to matter of purely local or restricted interest.

In this connection, I have to say, however, that the readers of THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, desiring to send copies thereof to soldiers and sailors stationed in the cantonments or with the American Expeditionary Forces abroad, may mail them at the transient second-class rate—one cent for each four ounces or fraction thereof—provided they are properly wrapped and addressed,—the name of the particular individual, together with the designation of the unit or organization to which he belongs, and the words "American Expeditionary Forces" being placed upon wrapper of each copy or package.

Respectfully,

THIRD ASSISTANT POSTMASTER GENERAL.

SUMMARY OF THE PROCEEDINGS OF THE FIFTEENTH ANNUAL MEETING OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY AT CHICAGO, AUGUST 12–13, 1918.

BY H. C. CHRISTENSEN, *Secretary.*

The Fifteenth Annual Meeting of the National Association Boards of Pharmacy held in Chicago on Monday and Tuesday, August 12 and 13 was, in point of interest, accomplishments and spirit of determination, to exert greater efforts than ever before, to make progress along the now well-recognized lines of the Association's work, the most successful ever held.

The Boards of Pharmacy of twenty-seven States were represented as follows: Alabama, Arkansas, Colorado, Connecticut, Florida, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, North Dakota, Oklahoma, South Carolina, Tennessee, Texas, Utah, Vermont, West Virginia, Wisconsin; total number of delegates and Associate delegates present, 53. Of the States represented 25 are Active member states, and two—New York and New Jersey—are "Associate" member States. Forty-four states, including the District of Columbia, are now Active member states of the N. A. B. P. and two, as before mentioned, are Associate member States. This leaves only three non-member States, namely, Rhode Island in the East and California and Wyoming in the West.

Active member states are those between which reciprocity for licentiates is in force. Associate member states take part in all the activities of the Association with the exception that, on account of state laws or other conditions, these have no general reciprocity with other member states.

Inasmuch as the official reporter of the meetings was called to Washington immediately after the final session Tuesday evening, before a transcript for a synopsis of the proceedings could be made, this report presents only such features as the secretary was able to recall, including the most important recommendations which were adopted.

The recommendations offered by President W. P. Porterfield which were adopted unanimously, show better than any other feature of the meeting the temper and unquestioned sincerity not only of the N. A. B. P. as an association, but also of the individual member Boards of Pharmacy holding membership in the Association.

Recommendation No. 1:

WHEREAS, An increasing number of states have established graduation from a recognized College of Pharmacy as a prerequisite for examination as a licensed pharmacist, and

WHEREAS, The courses offered by these schools become an all-important matter, be it

Resolved, That the N. A. B. P. take steps to establish a minimum standard for said courses upon which said recognition shall be based.

This resolution brought out considerable discussion and it was finally voted to refer it to the Executive Committee, and that Committee was instructed to confer with the Syllabus Committee in an effort to prepare a plan for recognition to be recommended to the individual member State Boards for adoption.

Recommendation No. 2:

WHEREAS, States generally require a definite amount of high school instruction or equivalent as a prerequisite for examination, be it

Resolved, That the N. A. B. P. take steps to establish a minimum requirement for each year of high school work—same to be represented by "Units" or other acceptable designation.

This was referred, the same as No. 1, to be considered jointly by the N. A. B. P. Executive Committee and the Syllabus Committee, with instructions to report a plan for general adoption.

Recommendation No. 3:

WHEREAS, It is apparent that the best interests of both the public and the druggists are

served by having two classes of pharmacists generally designated as Registered Pharmacist, and Assistant; be it hereby

Recommended, That efforts be made in all States where not already provided, to establish two classes of pharmacists (Registered Pharmacist, and Assistant Registered Pharmacists).

Recommendation No. 3 was unanimously adopted and referred to the Executive Committee with instructions to place the same in the hands of the incoming legislative committee. It was brought out that legislative bodies will convene in nearly forty states the coming winter. The legislative committee will be instructed to get in touch with Boards of Pharmacy and State Association legislative committees and to assist these bodies wherever possible in securing amendments to laws in States where no provision is made for Assistant Registered Pharmacist.

Recommendation No. 4:

WHEREAS, There are, in general, two classes of pharmacists recognized by various States, designated as Registered Pharmacist and Assistant Registered Pharmacist, or otherwise; and

WHEREAS, The line of demarcation between these two groups is growing sharper; and

WHEREAS, The requirements for the Registered Pharmacist is becoming distinctly greater in scope and character than the requirements necessary for Assistant Pharmacist; be it

Resolved, That this Association recommend that separate sets of questions be prepared for these two classes, and not merely the classification be based on higher and lower percent grades made on the same set of questions.

Recommendation No. 5:

WHEREAS, It is apparent that conditions in a number of States are such as will prevent Boards of Pharmacy in these States from complying with the recommendation of the N. A. B. P., adopted in 1915, to require high school graduation (4 years) in 1920 for entrance to examinations for Registered Pharmacist; be it, therefore

Resolved, That this Association extend the high school requirement to become effective January 1, 1923.

Recommendation No. 6:

WHEREAS, The National Association Boards of Pharmacy representing as it does the legal bodies—The State Boards of Pharmacy—in the various member States which have or should have the power to fix standards and requirements for entrance to examinations before these bodies for Pharmacist; be it hereby

Resolved, That this Association go on record as recommending that all Boards of Pharmacy holding membership in this Association should require not later than January 1, 1920, that candidates for examination for Registered Pharmacist must have had at least two years satisfactorily completed high school work.

Recommendations Nos. 4, 5 and 6 were adopted.

The discussion on recommendations Nos. 5 and 6 showed clearly that, while the high school requirement was extended to 1923, corresponding to the time adopted by the Conference Schools for such requirement, many Boards, probably a majority, will require full four-year high school for entrance to examination for Registered Pharmacist before that time.

Considerable discussion was had with regard to the Edmonds bill. H. L. Meredith, chairman N. A. B. P Committee on National Legislation, presented an interesting report on work done by his Committee in the interest of this bill. The report will be published in full in the Proceedings of the N. A. B. P. Results with regard to the advancement of this measure have so far not been satisfactory. Further efforts will be made by Mr. Meredith's Committee to obtain favorable action and, whatever the outcome, the N. A. B. P. will feel that its efforts in the interest of this bill which seeks recognition for our pharmacists in the Army in order that they may be able to render the best possible service, has been of a character that reflects much credit to this Committee and especially to Chairman Meredith.

Reports made by both the Legislative and Executive Committees showed good work accomplished.

The Chairman of the Advisory Examination Committee reported that several State Boards had been visited during the year and that a number of sets of questions had been sent in for suggestions and criticisms. He stated further that so far as was possible the Committee had complied with requests for criticism and suggestions with regard to examination papers. Also that the improvement in the character of questions used, and method of examinations showed a marked improvement.

Continuing the report stated as follows: If there is any criticism to be made specifically, it is, that a number of our members still do not give recognition in their questions, of the existence of the new ninth revision of the Pharmacopoeia. This work is a great improvement over all previous editions—embracing many new and valuable features. It should be the duty of every examining board to satisfy itself, through its examinations that applicants are fully conversant with current revisions of the U. S. P. and the N. F.

The trend of the U. S. P. toward the scientific is one of the most encouraging signs of the times for pharmacy. But, in order to profit by this progress, both schools of pharmacy and State examining bodies must take advantage of the opportunity offered to readjust their courses in pharmacy and include in the scope of State Board of Pharmacy examinations questions relating to the many new features covered by ninth revision of the Pharmacopoeia and the fourth edition of the National Formulary. The improvement, progress and readjustment necessary, is so apparent, that the urgent need of advancing to a 3-year course for Ph.G. with at least high school graduation as an entrance requirement, can not be questioned by any having the best interests of pharmacy at heart. And, when it is intimated that it is necessary for schools and colleges to adopt these advanced standards it is meant of course that boards of pharmacy must likewise prepare to require these prerequisites for entrance to examination for full Registered Pharmacist.

Some, on first thought, while granting the necessity for the advanced standards outlined in the foregoing paragraph, will hold that we should go easy on advancing standards at this time. True, the draft has taken heavy toll from the class of men composing the body of Registered Pharmacist, especially between the ages of 21 and 31. This has produced in practically all States a shortage of drug clerks. It should be acknowledged, however, that the demand is for clerks, ordinary, every day clerks, not proprietors, not managers, but just clerks. These clerks must of course have the knowledge and experience necessary to qualify them to sell and dispense medicines with safety to the public. In order to be a safe person to sell and dispense drugs, medicines and poisons to the public a clerk acts as assistant to the proprietor or manager, who should in all cases be fully registered persons, but such assistants need not necessarily be required to have the supposed high qualifications of the fully registered proprietor. The point is this: No matter how high the requirements for full registration a sufficient number of pharmacists will be forthcoming to fill the necessary need for proprietors.

It is for the reasons stated, therefore, that the present shortage of drug clerks throughout the United States has emphasized as never before the necessity for two classes of pharmacists in every state, of Registered Pharmacist, and Assistant Registered Pharmacist. A considerable number of the States now have these two classes, but in a very few States has the provision for assistants, as a source of supply of clerks been given the consideration that it deserves.

This proposition fits in well with that of raising the standards for full registration. The lower the standards for full registration the larger the supply of proprietors. But, as it is not proprietors that are needed, why not increase the qualifications required for entrance to examinations for Registered Pharmacist and thereby bring pharmacy on a par with other professions? If the present status of pharmacy, with regard to preliminary and professional training were equal to that of medicine and dentistry we would not be having the trouble that now obtains in securing recognition for pharmacy in the Army.

SIXTY-SIXTH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, CHICAGO, ILL., AUGUST 13–17, 1918.

ABSTRACT OF THE MINUTES OF THE FIRST GENERAL SESSION.

The First General Session of the Sixty-sixth Annual Meeting of the American Pharmaceutical Association was called to order in the Gold Room of Congress Hotel, Chicago, Tuesday evening, August 13, 1918, at 8.00 P.M. by President A. R. L. Dohme. (A list of those in attendance will be found under Societies and Colleges.)

After introductory and congratulatory remarks President Dohme called on Ex-President John Uri Lloyd of Cincinnati for the invocation. In his appeal Professor Lloyd referred to those with whom he had been associated in the past, whose duties had been assumed by those present, and expressed the hope for a successful convention which implied a helpfulness for the world.

President Dohme then invited representatives of the Government to deliver their messages and extended them a welcome. Lieut. Lawrence Zembsch spoke for the Navy Department. (Lieutenant Zembsch is one of eighty-two pharmacists of commissioned rank in the Navy. His rank is that of Lieutenant Junior Grade in the Medical Department, and he is stationed at Great Lakes Naval Training Station.)

The speaker extended an invitation to the members to visit the Training Station, where 50,000 of America's finest youths are preparing for their duties. He then explained the position of pharmacists in the service and contended that educated pharmacists had advantages they would not have without such education. He stated that before the war there were twenty-three pharmacists and a chief pharmacist in the Navy. To-day there are two hundred and seventy-one actively listed; eighty-two of these, after having passed a severe competitive examination as to their pharmaceutical knowledge, and their ability as first-aid men, as sanitary inspectors, X-ray technicians, laboratory workers, etc., have been given commissions. They have been commissioned for the period of the war as temporary surgeons of the United States Navy, with the rank of Lieutenant Junior Grade and Lieutenant in line for promotion to that of Lieutenant Commander, which is equal to that of Major in the Army.

Dr. Lyman F. Kebler conveyed the greetings of the Bureau of Chemistry, U. S. Department of Agriculture. He was reminded that this was the twenty-fifth anniversary of his wedding and of his first attendance (in Chicago, 1893) at a meeting of the American Pharmaceutical Association. Another representative of the Department was C. O. Ewing of the Pharmacognosy Laboratory. He stated that while Doctor Kebler was rounding out his twenty-fifth year of attendance, this was his first, but he hoped to be present twenty-five years hence.

President Dohme in responding said in part: "On behalf of the American Pharmaceutical Association it affords me great pleasure to thank you for your interest and valued remarks. I want to assure you it is a great pleasure for us to have you with us, and to participate in our proceedings and attend our various sectional meetings.

"I do not think there is a member of this profession, anywhere in this country, who is not imbued thoroughly with the conviction that it is a part of his duty 'to do his bit' and serve his country in whatever way he can. The great trouble is that the full opportunity for so doing has not presented itself. Surely, it is not because of lack of effort on our part to offer our services and to insist upon their acceptance, if possible. We hope fervently before this war is much older that pharmacists will be in the service of their country in the position in which they can be of greatest service, namely, as pharmacists."

Vice-President Leonard A. Seltzer of Detroit then assumed the chair while President Dohme presented his address. (See August issue of the JOURNAL, p. 665, *et seq.*, also this (September) number for plan of federation.)

After the reading of the address, and on motion duly made, seconded and carried, the President's address was referred to a committee consisting of Messrs. W. C. Anderson, J. A. Koch, H. P. Hynson, T. J. Bradley and J. C. Peacock.

President Dohme then resumed the chair.

The minutes of the Council were read by Secretary J. W. England. On motion of W. C. Anderson, which was seconded by Charles H. LaWall, the minutes were approved by unanimous vote. (See Council Business.)

Secretary William B. Day then read the list of special and standing committees. The President announced that reports from the respective chairmen would be called for at the next General Session.

President Dohme appointed the following members of the Committee on Resolutions: Messrs. S. C. Henry, J. H. Beal, Jeannot Hostmann, O. F. Claus, W. C. Anderson, Clair A. Dye, J. W. England, Jacob Diner, S. L. Hilton and F. J. Wulling.

H. P. Hynson offered an amendment to the by-laws, which was received and referred to the Council. It follows:

> Amend Chapter VIII, Article III, by adding:
> "and if the number of members of the American Pharmaceutical Association, who are members in good standing of any State Association, shall equal twenty-five per centum of the actual number of members of such a State Association, then the reduction shall be five dollars, making the net amount to be paid three dollars."

making the amended Article read—

> "Every member shall pay *in advance* to the Treasurer the sum of four dollars as annual dues, and by neglecting to pay said contribution for six successive months may be dropped from the roll of members. If the annual dues (four dollars) and the annual subscription to the JOURNAL (four dollars) be paid at one and the same time a reduction of three dollars shall be allowed, and if the number of members of the American Pharmaceutical Association who are members in good standing of any State Association shall equal twenty-five per centum of the actual number of members of such a State Association, then the reduction shall be five dollars, making the net amouut to be paid three dollars."

The Chair then declared a recess for the selection of the Nominating Committee. After reconvening the following were announced as members of the Nominating Committee:

Alabama:	W. E. Bingham.
Arkansas:	W. C. Hogan and Frank Schachleiter.
District of Columbia:	L. F. Kebler and S. L. Hilton.
Illinois:	Wm. Gray and Otto H. Mentz.
Indiana:	C. B. Jordan and F. W. Meissner.
Iowa:	W. J. Teeters and Chas. Falkenhainer.
Kansas:	L. E. Sayre and Edward Dorsey.
Kentucky:	J. W. Gayle.
Maryland:	W. M. Powell and E. F. Kelly.
Massachusetts:	T. J. Bradley and J. G. Godding.
Michigan:	Henry Kraemer and George Snyder.
Minnesota:	H. W. Rutske and L. J. Aberwald.
Missouri:	Otto F. Claus and H. M. Whelpley.
Nebraska:	R. A. Lyman and H. L. Thompson.
New Jersey:	Chas. W. Holzhauer and Jeannot Hostmann.
New York:	Wm. Mansfield and J. P. Snyder.
Ohio:	Robt. W. Terry and Eugene Selzer.
Pennsylvania:	J. C. Peacock and Freeman P. Stroup.
South Carolina:	W. H. Ziegler.
South Dakota:	F. L. Vilas and Mrs. H. R. Kenaston.
Tennessee:	Harry Whitehouse and E. V. Sheeley.

Texas:	W. H. Cousins and E. G. Eberle.
Vermont:	F. D. Pierce.
Virginia:	W. F. Rudd.
Wisconsin:	Edw. G. Ruenzel and E. G. Raeuber.

The President appointed the following members: Messrs. Charles H. LaWall, S. C. Henry, H. P. Hynson, F. E. Stewart, and J. W. England.

The First General Session was then adjourned.

SECOND GENERAL SESSION.

The Second General Session of the American Pharmaceutical Association was convened by President A. R. L. Dohme, Thursday, August 15, at 8.15 P.M.

The minutes of the First General Session were read and approved. (See preceding minutes.)

The minutes of the fourth and fifth sessions of the Council were then separately read by Secretary J. W. England and after a motion of L. E. Sayre and a second by Otto F. Claus the Association voted to approve the minutes. (See Council Business.)

Secretary William B. Day read communications from Mrs. Fletcher Howard, president of the Ladies' Auxiliary of the California State Druggists' Association, and one from Mrs. Emma Gary Wallace, corresponding secretary of the Women's Organization of the National Association of Retail Druggists. Both conveyed greetings and wishes for a successful meeting. The messages were accepted with due recognition by the Association.

President Dohme laid a letter before the Association from a gentleman in France in which the suggestion is made that a fund be raised for aiding French pharmacists. President Dohme stated that the proposed plan had the approval of the French Ambassador. The letter follows:

PROPOSAL OF ESTABLISHMENT OF A FUNDING LOAN FOR THE USE OF PHARMACISTS IN THE DEVASTATED REGIONS OF FRANCE AND BELGIUM WHO ARE DESIROUS OF RECOMMENCING BUSINESS WITHOUT DELAY.

As a consequence of the invasion and of the battles which have taken place in the north and the east of France, as well as in Belgium, nearly all the pharmacists there have had to leave their stores and frequently all their earthly possessions. Since then they have supported their families by undertaking the management of other stores or by helping their more fortunate colleagues, but in view of the length of the war they must take the future into consideration and taking into account the great difficulties which will have to be overcome in order to establish and run a business in the sections that are absolutely ruined, they are considering the advisability of buying now a small store in some other part of France, even if they may have to sell it again later, or when their presence in their native towns will be needed.

In the countries which have been the scene of these long battles nothing exists now. The corporations which have undertaken the reconstruction of these countries are in great doubt concerning their future (we, who are intimately associated with this work, know how true this is); some years must pass before it will be possible to reinstate a pharmacy in those regions where life will have to be recommenced, where it will be needful to act as in colonization, and where a drug store, however useful, is scarcely that which is of first importance in a new colony.

Ought we to abandon these pharmacists, who have had to contend with such difficulties for the past four years? Must we let them wait many years more until it be possible for them to return to their native towns? To reply to these questions it will suffice to quote the following letter from one of our colleagues of the Somme, who in the fall of 1917 was able to return to his city:

"My re-installation is very difficult and must be only partial in consequence of the obstacles I encounter in finding the goods and materials, all costing fearfully dear. Life is hard here; no bedding, other than the camp sacking, tiring and cold, especially for children. Food of all kinds costs twice as much as in Paris, frequently even more. Those who have returned—

poor souls—ought to be millionaires, which is far from being the case. The rare workmen who are to be found here ask 2 francs an hour, and they are not to be had when they are wanted. The houses which have not been demolished have neither doors nor windows, which are replaced by sacking. The walls, pierced here and there, show the traces of the passage of the shells and threatening winter will soon be on us."

These lines do not need comment, but to complete the sad picture, and as a sequel to the first one, our colleague wrote us as follows on the 30th of March:

"After a tiresome and perilous journey I have at last reached Rouen; all my work of the last 8 months has been destroyed." Then follows a pressing appeal for a position as manager. This colleague used to occupy a good position before the war; he is now 60 years old, with a large family.

On the other hand, if it be considered that a great many drug stores are at present being offered for sale in France, and that it would be doing a good action towards our colleagues who wish to sell, and to their families, in aiding in the sale of their stores, it will not be difficult to find a solution of the question.

On one side many want to sell; on the other side, there are many desirous of buying, but they can only do so under onerous conditions; one of them would have had to pay 20 per-cent for the aid received. By establishing a funding loan under reasonable conditions, help will be given to two different classes of interesting people. It is necessary that no time be lost, and if something really good is to be done it has to be done *now*.

Our colleagues of the invaded provinces have suffered and have aged with their misfortunes; so that they do not die in misery they ask not to have to wait until after the war to make themselves a new home. They wish to find the means of securing a loan for the amount needed for their prompt re-establishment. As guaranty they could offer (1) a mortgage on the store they would purchase, (2) a cession of their right to an indemnity for damage done by the war, which they will most certainly receive.

We are of the opinion that the amount of money needed for this undertaking will not be immense; the borrowers will be able to repay the advances with some speed, the amount to be repaid not being very heavy, as for cash payments the sellers can not ask very much. Supposing that the amount be 5,000 or 10,000 francs, and that, say, 50 pharmacists avail themselves of the facilities during the first year; that would imply a capital of from 250,000 to 500,000 francs or, say, $100,000. We think that being known, the generosity which animates all America towards their less fortunate brethren in France and Belgium will make it a comparatively easy task to find 5,000 pharmacists in the United States who would subscribe $20,00 each to help their colleagues in distress. We do not ask for this sum as a gift, but merely as a loan, on which we will gladly pay the interest until the capital—by degrees—be returned.

Jacob Diner in discussing the proposition referred back to a somewhat similar action which was taken after the San Francisco earthquake and stated that it was his understanding that all the money loaned to pharmacists was fully repaid. He spoke of this proposal as worthy of the Association's interest and moved the appointment of a committee to devise ways and means for carrying the suggestion into effect.

L. E. Sayre seconded the motion, S. E. Ewing moved to amend and apply the move to all distressed pharmacists in the war zone. This motion was seconded by Samuel L. Antonow. The mover of the first motion accepted of the amendment and the President called for a vote which was unanimously favorable to the proposition. The appointment of the committee was left to the Chairman.

The report of the General Secretary was read and approved. (To be printed.) The report of the Committee on Nominations was called for. It follows:

REPORT OF COMMITTEE ON NOMINATIONS.

To the President, Officers and Members of the American Pharmaceutical Association:

Your Committee on Nominations takes pleasure in presenting to you this report. The Committee has held two meetings. After we adjourned the first session, Dr. H. V. Arny, who had been nominated for the presidency, placed in the chairman's hands a letter declining the

honor. The Committee was therefore reconvened and Doctor Arny's declination was accepted with regrets, and the vacancy accordingly filled. The names we have to submit are:

For President: L. E. Sayre, Kansas; L. A. Seltzer, Michigan; and E. N. Gathercoal, Illinois.

For First Vice-President: T. J. Bradley, Massachusetts; A. H. Clark, Illinois; and W. H. Rudder, Indiana.

For Second Vice-President: Harry Whitehouse, Tennessee; John Culley, Utah; and Zada M. Cooper, Iowa.

For Third Vice-President: Jacob Diner, New York; E. F. Cook, Pennsylvania; Adolph Umenhofer, Illinois.

For Members of the Council: J. H. Beal, New York; R. A. Lyman, Nebraska; E. H. Thiesing, Ohio; S. L. Hilton, District of Columbia; William Mansfield, New York; C. H. LaWall, Pennsylvania; H. B. Mason, Michigan; W. J. Teeters, Iowa; and C. M. Snow, Illinois.

Respectfully submitted,

S. C. HENRY, *Chairman.*
S. L. HILTON, *Secretary.*

The report of the Committee was accepted and the names presented were declared the nominees to be voted on for the election of officers for 1919–1920.

Treasurer H. M. Whelpley made a verbal report and explained that the books and other records of the Treasurer had been audited. (The report was printed in the May issue of the JOURNAL, p. 474.)

He stated that while the funds of the Association amounted to $86,038.69 there was some difficulty in meeting the Association expenses from the annual receipts and he urged an increase of the membership.

The report of the Committee on International Pharmaceutical Nomenclature was called for, but no report was made.

The report of the Committee on Compulsory Health Insurance was read and referred for publication. (To be printed.)

No report was made by the Committee on National Legislation.

The Committee on the President's Address reported as follows:

REPORT OF THE COMMITTEE ON THE PRESIDENT'S ADDRESS.

To the Officers and Members of the American Pharmaceutical Association:

Your Committee has given careful consideration to the address of President Dohme, and while the author makes no definite proposals or recommendations, a sense of appreciation of the careful thought given to the preparation of the paper, the evident unselfish interest of the author and the essentially constructive spirit pervading the address, led the Committee to call attention to its leading features. All of the parts of the address that so earnestly and hopefully refer to the federation of pan-pharmacy are commendatorily referred to all those committees, conferences and divisions of the Association that have to do with this great effort.

The President is congratulated upon the progress made toward federation due to his enthusiasm and constructive effort.

Your Committee suggests that the remarks of the President under the sub-heading "Pharmacy Corps in the Army" be referred to the Association's delegates to the National Drug Trade Conference.

With the same object in view, that is, the proper distribution of the President's remarks, we suggest that those referring to the "Funds of the A. Ph. A." be called to the attention of the Standing Committee on Invested Savings and Trust Funds.

It is requested that the General Secretary of the Association send separate copies of the other sections of the President's address to the chief officer of the division or to the chairman of the committee who has the particular subject in hand, for consideration. They are, respectively, as follows:

"Presentation of Papers at Section Meetings:" To the chairmen of the several Sections.

"U. S. P. Revision:" To the chairman of the Committee on the Revision of the U. S. P.

"House of Delegates:" To the chairman of that body.

"Pharmaceutical Education:" To the chairman of the Section on Education and Legislation.

"Time of Meeting:" To the chairman of the Committee on Time and Place of Meeting.

The remarks of the President on the publication of the annual proceedings, specifically, are called to the attention of the Association with the recommendation of this Committee that the Committee on Publication consider the propriety and advisability of holding the plates of the proceedings used in the JOURNAL and including this matter in the Year Book when it is published.

Respectfully submitted,

HENRY P. HYNSON,
W. C. ANDERSON,
J. A. KOCH,
T. J. BRADLEY,
J. C. PEACOCK.

The report was unanimously adopted by vote of the Association.

Chairman J. W. England of the Committee on Revision of the Constitution and By-Laws presented several proposed amendments, necessitated by action of the Association and House of Delegates. They were read and in accordance with the rules laid over for action at the next General session. (For report see minutes of Final General Session.)

The report of the Committee on Physiological Testing was read and referred for publication. (To be printed.)

The report of the Committee on the Status of Pharmacists in the Government Service was presented by Chairman S. L. Hilton. He enlarged upon the report and after discussion it was moved by William Mansfield and seconded by L. E. Sayre that the report with Chairman Hilton's remarks thereon be printed in the September issue of the JOURNAL and that 5000 reprints be made thereof. The motion carried unanimously. (Printed in this number of the JOURNAL.)

Chairman Theodore J. Bradley presented the report of the Syllabus Committee. It was recommended that the Council provide the annual contribution of twenty-five dollars. (Report to be printed.)

H. V. Arny on behalf of the Committee on Weights and Measures moved that the Council be requested to provide for the annual membership fee in the American Metric Association. The motion was seconded and carried.

Chairman F. H. Freericks moved that the report of the Committee on Model Pharmacy Law be made before the Joint Session of the Section on Education and Legislation, the A. C. P. F. and N. A. B. P. It was so ordered.

A letter from William R. White of Nashville was read by Secretary Day in which he expressed the hope for a discussion of the best means for supplying pharmacists in the Service with pharmaceutical publications. After discussion it was the consensus of opinion that the best way would be for each member to send such publications to individual pharmacists, and that thereby the best service would be rendered. It was advised that this should be made known to all members and their coöperation solicited.

The report of Chairman John F. Hancock of the William Procter, Jr., Monument Fund was accompanied by a letter conveying greetings and expressing his regrets because of enforced absence. The report follows:

REPORT OF COMMITTEE ON WILLIAM PROCTER, JR., MONUMENT FUND.

In 1904, the American Pharmaceutical Association, at its Annual Meeting, adopted a resolution to appoint a committee to collect money for a proposed monument to the father of American Pharmacy, Prof. Wm. Procter, Jr., which monument of bronze was to be placed in the public grounds of the National Capitol.

Since that time the Committee on the Wm. Procter, Jr., Monument Fund has reported the results of its labors at each annual meeting of this Association and it was expected that this monument would be erected and formally transferred to the Government during the Centennial year of Procter's birth, at which time the Association would hold its Annual Meeting in Washington, D. C., to dignify the services of its unveiling.

Your Committee feels that the monument would have been completed in time for the Anniversary had it not been for the disturbed conditions of our National affairs. Congress, however, is so busy with war propositions that it will not give its consideration to minor matters but when peace returns we feel assured that the site and design for the monument will be approved.

The money collected has been conserved by the Association, and the Treasurer will report present conditions and the amount that is in his hands.

J. F. HANCOCK, *Chairman.*

The report was referred for publication.

The report of the Committee on Horticultural Nomenclature was read by Secretary Day. The report was received with thanks of the Association and the matter of financial contribution referred to the Council. (To be printed.)

The report of the Committee on Time and Place was read and after some discussion adopted. The difference of opinion was solely on the question of whether the Association should instruct not to hold the annual meeting in July or August. The vote finally declared was that due consideration should be given, if possible, to the President's recommendation of not holding the annual conventions in July or August. New York City was unanimously chosen for the 1919 meeting; the report follows:

REPORT OF THE COMMITTEE ON TIME AND PLACE.

Your Committee on Time and Place begs to report that four cities have tendered invitations to the Association to meet with them in 1919—Asbury Park, N. J., Buffalo, N. Y., Columbus, Ohio, and New York City. The Asbury Park invitation is signed by the Director of Publicity of the Board of Commissioners. The Buffalo invitation comes from the President of the Chamber of Commerce and from the Mayor. The Columbus invitation bears the signature of the Manager of the Convention and Publicity Association. The New York City invitation comes from The Merchants' Association of New York and from the New York Branch of the American Pharmaceutical Association.

It would seem the part of wisdom to hold the meeting next year at a point easy of access to the largest portion of our membership. Particularly will this be the case if conditions of today prevail at that time. The Committee is of one mind in recommending that you accept the invitation of the New York Branch and hold the 1919 meeting in New York City, the time to be determined upon by the Council.

T. J. BRADLEY,
S. L. HILTON,
EDW. SPEASE,
CLYDE M. SNOW, *Chairman.*

Chairman L. F. Kebler reported verbally for the Committee on the U. S. Pharmacopoeia. This report is to be presented in writing and was referred for publication.

Owing to the decease of Chairman A. B. Huested there was no report from the Committee on Closer Affiliation of Pharmacists and Physicians.

The Committee on Organization of Local Branches made no report. The report of the Delegates to the National Wholesale Druggists' Association was read and referred for publication. (To be printed.)

S. L. Hilton called attention to the vacancy in the Council, caused by the death of President Charles Holzhauer and nominated President A. R. L. Dohme.

The nomination was seconded by William Mansfield. There were no further nominations and Secretary Day called for a vote whereby the nominee was unanimously elected. President Dohme thanked the members for this expression of their confidence. The Second General Session was then adjourned.

(The transcript of the Third General Session has not come into the hands of the Editor. It will be printed in the October number of the JOURNAL.)

FEDERATED PHARMACEUTICAL ASSOCIATION, A. PH. A.*

House of Delegates elected by the State Pharmaceutical Associations, each of which is to be represented in the House by three delegates

National Drug Conference elected by the several National Drug Associations
N. A. R. D., 3 members
N. W. D. A., 3 members
A. D. M. A., 3 members
N. A. B. P., 3 members
A. C. of P. F., 3 members
A. A. of Ph.C., 3 members
P. A. of A., 3 members
U. S. Government, 3 members
A. Ph. A. delegates-at-large, 3 members

Executive Council
President House of Delegates
President National Drug Conference
Executive Secretary

House of Delegates is to consider all the business coming before the federated association and to be made up of three delegates duly elected by each State Pharmaceutical Association in this country, the delegates must be members of the federated association or A. Ph. A., which includes membership in the State Association. The House of Delegates is to be attended also by individual members of the federated association, who are not members of any State Association or are not delegates, but although they may discuss the questions before that house, they shall have no vote, only duly appointed delegates possessing this privilege. The House of Delegates shall elect its own officers, who shall be the officers of the federated association or A. Ph. A., and shall consist of a president, three vice-presidents, secretary and treasurer.

National Drug Conference is to consider such business as shall come before it from the House of Delegates or from its own members, which shall consist of three delegates duly appointed by each national association and the U. S. Government constituting it. It shall determine the qualification of its own members and its actions shall not be subject to review by any other agency. The Government delegates shall be one each from the Departments of the Treasury, Navy and Army. The A. Ph. A. should name three delegates-at-large to represent it in the Conference. If later the federated association becomes the A. Ph. A. then these delegates should be discontinued.

Executive Council.—This is the executive committee of the Association and shall consist of the President of the House of Delegates, the President of the Conference and an executive secretary duly elected by the Conference, who shall also be secretary of the Conference. He shall be paid a good salary and shall devote all his time to his work, which shall be done at the central offices of the Association, located at Washington or Chicago, where shall also be located the laboratories of the Association.

Service.—There shall be instituted a series of services for the members of the Federated Association which shall be carried on in the offices and laboratories of the same under the direction of the Executive Council, who shall also have control of the funds of the Association and its publications. These services shall consist of:

* Presenting Ex-President A. R. L. Dohme's views and based upon conclusions reached at the Chicago meeting, A. Ph. A.

a—Bureau of Chemistry and Pharmacy—where tests and assays of any products or substances shall be made for any member and an opinion given upon their compliance with laws if the member for whom it is done so desires.

b—Bureau of Laws and Accounting—where legal advice, trade marks, patents, costs systems and analysis, etc., shall be available for members.

c—Bureau of Exchange of Unsalable Goods—where members may exchange their unsalable goods for salable goods and thus reduce their overhead expenses. This might be extended later to a stock of rarer and costlier items not usually carried by pharmacists but available in an emergency to members.

d—Bureau of Employment—where records should be kept of employees and employers, as well as employers could apply to secure assistance and be brought together.

e—Bureau of Publicity—where under direction of a competent publicity man the central offices shall enter upon a systematic campaign of publicity in the public press and magazines of the entire country so as to make known to the public and our legislators the real value and services of the pharmacists of the United States.

Membership.—Membership in the federated association should be made Five Dollars, which would also include membership in the State Association, and in the Conference. Each national association should remit to the federated association this amount of five dollars for each of its members. In return for this each member is to receive the services of the Association and its publications. It is estimated that there are 28,000 members of state associations to which should be added the possible 7,500 members that would result from remittance dues from national associations. From both there should result about 25,000 members, which would give the association an income that would enable it to give service and publications to its members that would more than justify membership in it and through federation give pharmacy a weight and influence which would be helpful in legislation and publicity in many ways.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON FEDERATION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

In accordance with a recommendation made last year in the address of President F. J. Wulling, and approved at a general session of the Association, President Dohme on January 22nd appointed the following as members of a Committee on Federation: H. V. Arny, C. E. Caspari, C. H. LaWall, W. A. Hover, F. J. Wulling, J. H. Beal, J. U. Lloyd, S. C. Henry, A. R. L. Dohme, and W. B. Day.

The Committee was immediately organized by correspondence and since then four bulletins have been issued in which the basic principles of the federation of American pharmaceutical bodies were discussed. During the same time, largely through the energetic efforts of President Dohme, other National and State pharmaceutical organizations became interested in the plan of federation.

The discussion by correspondence showed that a satisfactory solution of the problems before us could be secured only by meeting of the Committee, alone and with representatives of other organizations likely to be included in the plan of federation.

Such meeting was held in Chicago on August 10th, on the morning of which day eight of the ten members of the Committee met and informally discussed federation and passed a motion reaffirming the principles of federation enunciated in the address of President Wulling last year.

In the afternoon, a conference, at which the Committee met with the representatives of National drug bodies, brought the results outlined hereafter. At this conference, H. V. Arny presided, while W. B. Day acted as secretary, and on roll call the following delegates were found to be present:

From the National Association of Boards of Pharmacy: H. C. Christensen.

From the American Conference of Pharmaceutical Faculties: T. J. Bradley, R. A. Lyman and Edward Kremers.

From the American Drug Manufacturers' Association: C. J. Lynn, R. C. Stofer and C. M. Woodruff.

From the Proprietary Association of America: F. A. Blair, E. F. Kemp and Z. O. Patten.

From the National Association of Retail Druggists: W. H. Cousins and S. C. Henry.

From the American Association of Pharmaceutical Chemists: C. H. Searles and W. S. Burdick.

From the American Pharmaceutical Association (Federation Committee): H. V. Arny, C. E. Caspari, C. H. LaWall, F. J. Wulling, J. H. Beal, J. U. Lloyd, A. R. L. Dohme, S. C. Henry and W. B. Day.

In addition to the foregoing delegates, H. M. Whelpley, H. P. Hynson and M. A. Mandabach were present, as guests, and were given the privilege of the floor.

The National Wholesale Druggists' Association selected a delegation consisting of J. W. Morrisson, Francis Keeling, Jr., and Paul Schuh, none of whom were present at the conference.

After a general discussion of federation, the following resolution was submitted by C. J. Lynn:

> WHEREAS, The experience of the last fifty years and more has demonstrated that one national organization has not adequately cared for the various interests of the several branches of American Pharmacy, which experience is the underlying reason for the organization of the several independent national associations now existing, which have heretofore most effectively represented their respective interests; and
>
> WHEREAS, Many of the delegates here present are without power to bind their respective organizations to any plan of federation; therefore be it
>
> *Resolved*, That it is the sense of this informal meeting that a mergence of such organizations in a larger federation at this time is not practical; and be it further
>
> *Resolved*, That having in the National Drug Trade Conference, an organization which has already accomplished much good for the common interests of the several associations here represented, it should be the aim and purpose of these bodies to further develop the conference so that it may be still more efficient in promoting the general welfare of scientific and commercial pharmacy, in which we are all concerned.

That resolution was put to a vote and was approved, Messrs. Wulling, Dohme, Caspari and Lyman asking to be recorded as voting against it.

There was then passed a motion that a conference of delegates from organizations invited to the 1918 meeting, be held on the Saturday prior to the 1919 meeting of the American Pharmaceutical Association, and that a committee consisting of one representative from each National drug body be chosen as a committee on arrangements for the 1919 conference. This motion carried and the chair selected the following Committee: J. W. Morrisson (N. W. D. A.), H. C. Christensen (N. A. B. P.), T. J. Bradley (A. C. P. F.), C. J. Lynn (A. D. M. A.), F. A. Blair (P. A. A.), W. H. Cousins (N. A. R. D.), C. H. Searle (A. A. P. C.), and H. V. Arny (A. Ph.A.)

On Monday, August 12th, the Federation Committee met again for a final discussion of the problems entrusted to it, notably those questions relating to the House of Delegates and the federation of State pharmaceutical associations, that is being accomplished through the work of the House.

At this meeting the following recommendations were adopted and are transmitted to the House and to the General Session of the Association for final action.

1. *Resolved*, That it is the sense of the Federation Committee that the By-laws of the House of Delegates should be so amended that all delegates to the House shall be members of the A. Ph. A. at the time they serve.

2. *Resolved*, That it is the sense of the Federation Committee that the continuation and strengthening of the House of Delegates and the active exercise of its functions present a great opportunity for the furtherance of the federation of pharmaceutical organizations for the better coördination of the efforts of such organizations in national and State affairs and for the proper development and evolution of pharmacy.

A third resolution (given hereafter) is based upon the fact that last year Chairman J. H. Beal, of the House of Delegates, proposed five additions to the functions of the House, as follows:

(A) Transfer the reception of fraternal delegates from other pharmaceutical and allied organizations or from departments of the United States Government from the General Sessions to the sessions of the House of Delegates.

(B) Abolish the Committee on Resolutions provided for in Articles I and IX, Chapter X, of the By-laws and transfer its functions to a similar committee of the House of Delegates.

(C) Instruct the Committees on the United States Pharmacopoeia and on the National Formulary to report to The House of Delegates in addition to the reports which they present elsewhere.

(D) Make it the duty of the Committee on Patents and Trade-marks to report to the House of Delegates as well as to the General Sessions.

(E) Transfer the reports of The Commission on Proprietary Medicines (except upon financial matters and upon the election of members) from the Council to The House of Delegates.

The first of the above recommendations was adopted at the Third General Session of The Association last year; the second recommendation was referred to the Committee on Constitution and By-laws, which has not yet reported thereon; the third, fourth and fifth recommendations were laid on the table.

Your Federation Committee gave this matter its careful attention, and believing that all of the five recommendations are of vital importance to the development of the House of Delegates, submits the following:

3. *Resolved,* That the recommendations made last year by Chairman Beal, of the House, should be adopted.

A final recommendation made by your Committee is:

4. *Resolved,* That the Committee on Federation be continued for another year.

In conclusion, your Committee begs, in summarizing its work, to say that as in all great undertakings, the work accomplished by it during the past year is not as great as was desired by some of its members. It has, however, made one great step toward federation by starting a movement toward the enlargement of the scope of the Drug Trade Conference, by which it is hoped that a broad federation of national drug organizations will be secured. It will make another advance if the plan of federation of State associations in the House of Delegates is strengthened by the adoption of the resolutions submitted above. These two basic purposes accomplished, the Conference and the House will be as two piers of a great bridge and when as years go on there is completed between the two a connecting span in the shape of service features so vitally needed by American pharmacy, the federation idea will then be a realized dream.

REPORT OF THE COMMITTEE ON THE STATUS OF PHARMACISTS IN THE GOVERNMENT SERVICE.

To the President and Members of the American Pharmaceutical Association:

Your Committee on the Status of Pharmacists in the Government Service has confined its efforts of the past year to obtain Congressional legislation for the establishment of a Pharmaceutical Corps in the U. S. Army. We believed it was our duty to concentrate our work on a single proposition, that contemplated a real war service for the men fighting for the country, by placing the dispensing of medicines in the hands of trained pharmacists, instead of, as at present, largely in those untrained. The enactment of such a measure would also advance the professional standing of pharmacy.

The results I am able to report are far from satisfactory, but the outlook is not hopeless. I believe that we have a fighting chance—but we must fight and fight continuously.

From the outset, your Committee recognized that the work before it was difficult and the progress must be slow, especially in view of the opposition of the Surgeon General. We,

however, succeeded in securing a hearing on March 19, 1918, before the Committee on Military Affairs, and, we believe, corrected many wrong impressions in the minds of the members of the Committee. The report of the hearing on H. R. 5531 has been generally distributed and widely read.

We deemed it advisable to learn the actual conditions existing with reference to the dispensing of medicines in the Army camps, so that we could present the facts at the proper time. We prepared a questionnaire and forwarded same through the office of the JOURNAL to the secretaries of the Boards of Pharmacy, requesting them to obtain, at first hand, the desired information. Responses were quite promptly received from twenty-six states and presented conditions that were as we anticipated, namely, the dispensing of medicines was often done by others than graduate pharmacists and sometimes those who had been bartenders, salesmen, bookkeepers and others, without any knowledge of drugs, were in charge of dispensaries, while pharmacists under them as privates could do no dispensing except under the direction of such non-commissioned officers. All of the data obtained were tabulated and presented to the Committee on Military Affairs, and became part of the record.

With the assistance of Congressman Edmonds, the National Pharmaceutical Service Association, as well as your Chairman, used every reasonable means to obtain a hearing on the Edmonds bill before the Committee on Military Affairs. Important matters pertaining to the Army, and the Army Appropriation Bill, occupied the undivided attention of the Committee until the middle of March, when a date was set and the hearing held March 19, 1918.

The National Pharmaceutical Service Association sent out a call for a conference to be held at Baltimore the day prior to the hearing. Fifty-one delegates were present, representing nearly one hundred colleges, national associations, State and local associations, and the afternoon was devoted to discussing plans for the presentation of our case at the hearing before the Committee on the following day.

Your chairman was called upon to preside, and Mr. R. P. Fischelis was elected secretary. After a general discussion it was decided that a committee be appointed to select the speakers to present arguments to the Committee on Military Affairs. After careful deliberation, the following gentlemen were selected: Prof. F. J. Wulling, the main speaker, was to cover the entire subject in a concise form. If time permitted, the following gentlemen would discuss the following special topics: Dr. J. Madison Taylor, "The Need of a Pharmaceutical Corps in the U. S. Army, from a Medical Point of View." E. G. Eberle, "The Need of the Same Protection as far as Pharmaceutical Service Is Concerned in the Army, as Provided by State Laws in Civil Life." Caswell A. Mayo, "Pharmaceutical Army Corps in Foreign Countries." S. C. Henry, "What the Edmonds Bill Is and What It Stands For." Prof. Charles Caspari, "What Pharmacy Has Done in the Compilation of Standards for Drugs and Medicines." W. L. Crounse, representing the National Wholesale Druggists' Association, "A Refutation of the Charge Made that Manufacturing Pharmacists Objected to the Formation of a Pharmaceutical Corps in the U. S. Army."

All branches of pharmacy were represented at the conference and the hearing of next day. The conference was exceedingly harmonious, every one present being desirous to do his bit. The following day we met at the office of Mr. Edmonds; additional delegates who were unable to attend the meeting of the previous day were present, so that about seventy to seventy-five delegates attended the hearing.

Mr. Edmonds opened the hearing with a brief statement and introduced the speakers. The program was fully carried out, much interest being shown and many questions asked by members of the Committee. It was the opinion of those present that a very favorable impression was made on the Committee. The Committee, however, has done nothing with respect to considering or reporting its conclusions and from what I am able to learn the bill may not be further considered or reported at this session. Mr. Edmonds has asked that a hearing be granted him and other members of Congress that have committed themselves to this legislation; as yet, no time has been set by the Committee and there is some doubt if they will be heard at this session of Congress. It is evident, if anything is to be accomplished, that the opposition of the Surgeon General must be overcome. How this can be consummated is problematic and difficult to predict at this time. Surgeon General Gorgas retires this Fall; who his successor will be and what his attitude is can not be predicted. We feel that now is the time when all drug industries must coöperate in a united endeavor in support of this measure. The future of pharmacy largely

depends upon taking this step. The medical, dental and chemical professions are listened to and usually obtain what they desire. This is best illustrated by the formation of the Chemical Warfare Service, by executive order, and similar action could have been had for pharmacy, at least for the period of the war, if the pharmaceutical profession had been fully and as well organized as the other professions.

Close contact with men of authority in the medical departments usually elicits the information that the pharmacists are not wanted, they know too much, that they want men without pharmaceutical training, so that they can train them as they desire. The younger men in the medical service want the pharmacists, but they have not the power to overcome the opposition and, as a result, our soldiers are not getting the best pharmaceutical service obtainable and thousands of trained pharmacists are working in the trenches and along other lines different from those they are best fitted for by training and education. This lack of coördination is not only detrimental to the Army but is wasteful of an important and national asset.

In closing, we want to urge that the American Pharmaceutical Association take the initiative and call on all drug organizations to take an active part and to use its utmost endeavor to convince the Surgeon General and Secretary of War of the urgent necessity for establishing a Pharmaceutical Corps, thereby eliminating the necessity for the large number of physicians that is now being called for and which will, beyond all question of doubt, work a hardship on those remaining at home and, that the men in the Army will get better pharmaceutical service than they are receiving at present.

We urge that every member of these pharmaceutical associations work with their Congressmen, pointing out the conditions now existing, show the necessity for such a Corps and demand legislation providing for a Pharmaceutical Corps along the lines that have been worked out and proven most satisfactory in foreign armies.

Respectfully submitted,

S. L. HILTON, *Chairman.*

SUPPLEMENTARY REMARKS BY CHAIRMAN S. L. HILTON.

S. L. HILTON: I want to make a few remarks supplementing my report as chairman. I listened to an able paper by Dr. F. W. Shepardson, of the Education Department of the State of Illinois, before the Section on Education and Legislation to-day. He contended that the Department recognized the situation in the drug business, that the commercial element far exceeds the educational or professional. He inferred that this had much to do with the difficulties in securing recognition for pharmacy by the establishment of a Pharmaceutical Corps in the U. S. Army. Doctor Shepardson is right. He presents the attitude of the Government correctly and the conditions in the drug business have made it difficult to impress the desires of those working for the establishment of a Pharmaceutical Corps, that we are not demanding a commission for every corner druggist, but contending for a Pharmaceutical Corps to be composed of trained pharmacists, and every one acquainted with American pharmacy knows that we have them. If others want to enlist that is their privilege, and if by study and perseverance they attain to the proper standard and pass the provided examination, they should have the opportunity. But the proposal is for the admission and advancement of educated pharmacists.

The idea is quite general, and also with Government officials, that all licensed pharmacists, regardless of qualification, should be commissioned in such a corps. Congressmen have expressed themselves that they would favor the bill for a pharmaceutical corps provided every licensed pharmacist would be entitled to a commission.

That is not what we are working for nor endeavoring to secure legislation for. If that is the object then we had better stop our efforts right now—the aim is to have a Pharmaceutical Corps composed of men qualified in pharmacy by education and training, men who are competent to render pharmaceutical service.

The statements made by Mr. Hilton received the unanimous support of the convention.

REPORT OF COMMITTEE ON QUALITY OF MEDICINAL PRODUCTS. AMERICAN PHARMACEUTICAL ASSOCIATION.*

The report of this Committee embraces a condensed statement of the quality of such finished medicinal products made by manufacturing and retail pharmacists and of the various ingredients and materials used, that have been brought to our attention during the current Association year.

When we consider that a slight variation from standard and an unconscious error in the wording of a label are tabulated as infringements of law, it is surprising that the record is as favorable as it is. Individual opinion seems to dictate standards in many cases of complaint for improper wording of labels. There is little wilful effort to substitute, yet the continued high range of prices offers a temptation that a few are unable to resist. Many reported instances are the result of carelessness rather than purpose. One State Board reports 27% of 371 samples adulterated; 18% consisted of deteriorated spirit of nitrous ether, 7% of camphorated oil deficient in camphor and 2% of spirit of anise, spirit of peppermint and tincture of iodine below standard. Of 1685 samples 20% were defective and consisted principally of the above-named products.

In the case of the spirit of anise, spirit of peppermint and liniment of camphor, their being sub-standard is the result of negligence, while the spirit of nitrous ether may have been carefully made but carelessly stored. Prof. Herman C. Lythgoe, Director and Analyst of the Massachusetts State Board of Health, has published a chart showing the comparative permanence of this product stored in full bottles in a cool place and the very rapid impairment stored in flint bottles exposed to sunlight. In the latter case the product was entirely worthless after the lapse of 82 days. Dr. Hodgson, in the *Pharmaceutical Journal* shows entire decomposition in 15 days stored in an open bottle, while the same product in a full, well-stoppered bottle lost only 4% in one month and about 30% in 3 months.

The condition of the market has led to the suggestion of numerous substitutes to favor conservation and reduce cost. Glucose and mucilage of chondrus have been recommended as substitutes for syrup and glycerin. Neither of these substitutes will represent the sweetness of syrup without the addition of saccharin; both are more subject to decomposition. The extensive advertising of glycerin substitutes that are nothing but invert sugar syrups is misleading. They are substitutes only in gravity and freedom from crystallization, but are entirely devoid of the solvent and preservative action of glycerin.

Many substitutes for *Adeps lanae* have been suggested, but none of them have the same composition as the original, nor the same essential value even though they may resemble the physical characteristics.

The condition of the sugar market has led to active use of saccharin. Pronounced harmless by many unquestioned authorities, and condemned by others, legally used in some states and illegally in others, pronounced of decided advantage in preventing stomach and intestinal fermentation, there seems to be no good reason why it cannot be used except where the food value and preservative action of sugar is required. Even at the market value of $23.00 per pound it is a cheaper sweetener than sugar. In Germany, laws forbidding the use of artificial sweetening substances, have been repealed. Saccharin and a new product dulcin, or sucrol, paraphenetolcarbamide, are largely used. Dulcin is 200 times as sweet as sugar and does not have the bitter after-taste of saccharin.

The offering of fictitious styrax at a price twenty times the former cost of the original genuine, now out of the market, has led to the questioning of its value and tincture of benzoin compound, substituting an equivalent of balsam of tolu for the styrax, is being used by several hospitals with perfect satisfaction.

The growth of some narcotic drugs in the United States that were formerly entirely imported, has served to somewhat reduce their price and to furnish products of exceptional value. There is still dispute about some such drugs. American cannabis is pronounced by some equal to, if not superior, to the foreign, while others consider it far inferior. While there is undoubtedly difference in quality in different lots of American grown, the wide range published may be due in part to the variation in results obtained by physiological tests of the same sample. The following reports were obtained from physiological tests of the same drug, the reports being submitted by three experts.

*Presented at Chicago meeting, A. Ph. A., 1918.

Report No. 1, using 7 times the U. S. P. quantity of drug: Three dogs had slight incoördination; three had considerable incoördination.

Report No. 2, using 4 times the U. S. P. quantity: All six dogs had slight incoördination.

Report No. 3, using the U. S. P. quantity: 0.03 mil of fluidextract of cannabis per kilo weight of dog.

Dog No. 1, considerable incoördination.
Dog No. 2, drowsy, lays down, no incoordination.
Dog No. 3, drowsy, very slight, no incoördination.
Dog No. 4, no incoördination.
Dog No. 5, no incoördination.
Dog No. 6, drowsy, slight, incoördination.
Dog No. 7, slight incoördination.

Report No. 3, using 0.04 mil of fluidextract of cannabis per kilo weight of dog:

Dog No. 1, marked incoördination.
Dog No. 2, drowsy, slight incoördination.
Dog No. 3, considerable incoördination.
Dog No. 4, shivers, considerable incoördination.
Dog No. 5, incoördination.
Dog No. 6, marked incoördination.
Dog No. 7, marked incoördination.

Drug is 80% of U. S. P. strength.

Report No. 4, using 0.03 mil of fluidextract:

Dog No. 1, no ataxia.
Dog No. 2, no ataxia.
Dog No. 3, used control Cannabis, questionable ataxia.
Using 0.04 mil, no ataxia.
Using 0.05 mil, no ataxia.
Using 0.03 mil of control. Very good ataxia.
Using 0.05 mil, possibly faint ataxia.
Using 0.06 mil, very fair ataxia.
Using 0.05 mil, slight ataxia.
Using 0.05 mil, slight ataxia.
Using 0.08 mil, very good ataxia.

Drug is 60% of U. S. P. strength.

Variation in some products is due to variation in method of manufacture. Syrup of tolu is frequently made from "Soluble Tolu" furnished by the manufacturer and these vary much in character. The U. S. P. calls for 50 mils tincture of tolu, representing 10 Gm. of balsam in 1000 mils of syrup. Triturating the tincture with magnesium carbonate and water and evaporating gives 2.144 Gm. of residue, equivalent to 0.2144 Gm. in 100 mils of syrup.

Manufacturer No. 1, Soluble Tolu: Alcohol 20%, residue 0.17%. Formula: $1^1/_4$ fluidounces to 15 ounces of syrup gives a syrup containing about 0.013 Gm. balsam, or one-sixteenth of the U. S. P. strength. Original product was acid in reaction; 10 mils required 1.54 mils N/10 KOH.

Manufacturer No. 2, Soluble Tolu: Alcohol 25%, residue 2.58%. Formula same as No. 1, gives a syrup containing about 0.2 Gm. balsam, or about 93% of U. S. P. strength. Original product was alkaline; 10 mils required 2.0 mils N/10 H_2SO_4.

Manufacturer No. 3, Alcohol 25%, residue 1.2%. Formula: Twenty mils of product and 80 mils of syrup give a syrup about $1^1/_8$ times the U. S. P. strength. Original product was alkaline; 10 mils required 2.8 mils N/10 H_2SO_4.

Manufacturer No. 4, Alcohol 25%, residue 1.6%. Formula: Twenty mils of the product and 80 mils of syrup give a syrup about $1^1/_2$ times the U. S. P. strength. Original product was alkaline; 10 mils required 2.8 mils N/10 H_2SO_4. These comparisons are of no value unless the residue is determined to come from tolu only.

Scarcity of labor has rapidly advanced the prices of most of our native botanicals and led to carelessness in maintaining the standard of excellence. Wild cherry bark has been mixed with black cherry bark; white pine bark marketed entire instead of inner bark only, excess of stems and fibers are left attached to roots.

Licorice root has advanced to eight times its former cost and much inferior quality has been offered. Some bales contained a notable quantity of stems. One sample of powder was not licorice root. It contained only 8.3% soluble matter of foreign taste and 3.5% ash. It is said that imports from Asia derived from *Glycyrrhiza uralensis* Fischer, an unofficial species, have been frequent. The quality of root is good but comes mixed with a considerable quantity

of stems. It contains about the same amount of glycyrrhizinic acid as the Spanish and Russian varieties.

The presence of glycerin in some chemical syrups and some tannin bearing fluid extracts should be retained and it should be dropped from preparations where it is valueless and merely adds to the cost, as fluidextracts of dandelion, hydrastis, tincture of gentian compound, etc. In aromatic fluidextract of cascara its mild laxative action may be of some service, but not proportionate to its high cost and it could well be replaced by syrup. It has been stated that glycerin is obtained by a new process from black strap molasses, 470 gallons yielding 506 pounds of glycerin and 145 gallons of absolute alcohol. Signed, E. L. PATCH.

The disarrangement of the collection of foreign drugs, due to the European war and the consequent disturbances in the collection of home drugs, and in the drug market is still in evidence. Almost every wild plant that grows is being gathered and submitted for inspection with the hope that it will prove to be *Hydrastis* or some one of the few drugs that under existing conditions are bringing and will bring for a limited period, a fancy price. Many have made large collections of non-medicinal plants before ascertaining the identity of the plant gathered and as a natural consequence, have had their trouble for their pains as well as in those cases where help was hired and paid for sustaining an actual money loss. Needless to say that these non-medicinal plants, gathered for the drug market, have not found their way into trade channels.

There is a tendency among collectors towards profiteering, as is shown by the gathering of those parts of plants not desirable. Examples are the presence of root leaves, stem bases and rootlets on rhizomes and roots which should be gathered free of these parts such as star grass, culvers root, trillium, etc.; the herb, whole or cut for leaves, as in catnip, tansy, wormwood, etc.; inflorescences in place of flowers, etc. This tendency should be rigidly guarded against and strenuously combatted. Signed, O. A. FARWELL.

ABSINTHIUM: Various species of Artemisia that have the leaves white woolly on both sides are gathered in quantities and offered as Wormwood. O. A. FARWELL.

ACID BENZOIC: Several shipments offered for entry containing as high as 30% of powdered boric acid. *Spatula*. One lot not perfectly white, a heavy powder, contained a brown substance insoluble in ether; ignited left no residue. E. L. PATCH.

ACID HYDROCYANIC, DILUTE: One shipment assaying only 1.75% of absolute acid was rejected. H. ENGELHARDT.

ACID OLEIC, PURIFIED: It seems to be rather difficult to get U. S. P. acid. A number of shipments we received had a high congealing point, showing the presence of an undue amount of solid fatty acids and some contained unsaponified fats. H. ENGELHARDT.

ACONITE LEAF: Aconite leaves seem to be a rarity. The leaf has given place to the herb in either the flowering or fruiting stage. O. A. FARWELL.

ACONITE ROOT: Two samples were of good quality. H. ENGELHARDT.

The tuber that is now on the market may be topped by as much as four inches of stem base. The smaller, plumper, lighter colored Japanese root is often inter-mixed.
O. A. FARWELL.

Japanese Aconite, *Aconitum fisheri* Reich, has been substituted for the official *Aconitum napellus* L. It does not contain aconitine, but other alkaloids and should not be used in any preparations of the U. S. P. Japanese aconite usually consists of mother tubers with stem bases and daughter tubers with buds. They are smaller in size, lighter, smoother, less wrinkled and not twisted, generally more mealy (due to starch) and have a different arrangement of the fibro-vascular bundles, not so markedly star shaped. DEPARTMENT OF AGRICULTURE.

ALCOHOL: Two barrels of Cologne Spirit yellowed with KOH solution and turned brown rapidly with silver nitrate and were slightly deficient in strength. E. L. PATCH.

ALUM, DRIED: One lot was a mixture of potassium and ammonium alums, contained 6% of water (U. S. P. allows 10%), entirely soluble in hot water. One lot contained 15% of water and 1.5% insoluble in water. E. L. PATCH.

AMERICAN HEMP: No. 1 gave 3.6% ether-soluble resin. No. 2, 15.9%. No. 3, 9%. No. 4, 14.2%. No. 5, 14.2%. No. 6, 7.8%. E. L. PATCH.

Sample contained 11.5% of seeds; gave 15.3% of oleoresin. Physiologically tested: Normal doses *per os* and by intravenous injection, well-marked symptoms within one hour and a second injection rapidly killed the animal by cardio-inhibition. I am of the opinion that the

sample is a physiologically active product which is indistinguishable from the ordinary *Cannabis Indica*. ERNEST J. PARRY, London, Eng.

APOMORPHINE: The amorphous variety was offered and was rejected because it is a well-known fact that this modification produces physiological effects other than those produced by the crystalline variety and besides is considerably more toxic. H. ENGELHARDT.

ANTISEPTIC CORROSIVE TABLETS U. S. P.: Assayed 46.315% corrosive sublimate and 53.685% sodium chloride. It is difficult to maintain a uniform mixture of 50% of each. Second lot assayed 50.05% corrosive sublimate and 50.03% sodium chloride.

E. L. PATCH.

ARNICA FLOWERS: *Inula britannica* L. has been mixed with and substituted for arnica flowers. The ray flowers are smaller in length and width than those of true arnica. The veins number four, while those of true arnica are seven to twelve. The receptacle is smooth instead of hairy as in true arnica. DEPARTMENT OF FOOD AND DRUGS.

ASAFOETIDA: Of four samples we rejected one yielding only 26% alcohol-soluble matter and leaving 30% of ash on incineration. H. ENGELHARDT.

ASPIDOSPERMA: The official drug has come to be a rarity. The red quebracho has been substituted for it as well as some other unknown bark which bears a more or less close resemolance to the outer portion only of the official bark. O. A. FARWELL.

ASPIRIN: A spurious product has been found in nearly all large centers of Texas.

Pharm. Era.

BARIUM DIOXIDE: Assay 86.4% BaO_2, traces of chloride and nitrate.

E. L. PATCH.

BEEF EXTRACT: Proteid contents vary; 34.82%, 50.5%, 50%, 45.18%, 53.42%, 52.72%; salt from 3.65% to 8%. E. L. PATCH.

BEESWAX: Of fifteen samples of white wax only one was adulterated. This adulteration was white lead. K. F. EHMANN.

BELLADONNA LEAF: Sample sold for 0.690 assayed 0.389; other lots 0.390, 0.497, 0.720, 0.425. E. L. PATCH.

Since this drug has become scarce, the common nightshade, *Solanum nigrum* L., has been gathered in all sections of the country and offered in large quantities for belladonna.

O. A. FARWELL.

We examined 23 shipments of which only two had to be rejected on account of being below the U. S. P. standard. The quality of this drug which was cultivated in this country was very good; one lot assayed as high as 1.1% of total mydriatic alkaloids. One shipment was received which was marked as "belladonna herb," but did not contain any alkaloids; it was derived from a solanaceous plant. H. ENGELHARDT.

Examination of samples of importations of "belladonna leaves" has disclosed that *Solanum nigrum* L. has been substituted in some instances for the true material. Since this species contains alkaloids other than those present in genuine belladonna, it should be excluded.

DEPARTMENT AGRICULTURE.

BELLADONNA ROOT: Belladonna root seems to be unobtainable; two shipments were of good quality. H. ENGELHARDT.

Examination of samples of importations has disclosed that the roots of yellow dock, *Rumex crispus* L. were substituted in one instance for the true material. The yellow dock roots are externally reddish brown, deeply longitudinally wrinkled, finely annulate above and have a somewhat fibrous fracture, whereas those of *Atropa belladonna* are externally pale brownish gray, show only weak longitudinal wrinkles and have a nearly smooth fracture.

DEPARTMENT OF AGRICULTURE.

BETANAPHTHOL: One lot was dark colored, rank in odor and not completely soluble in ammonia water. E. L. PATCH.

BISMUTH SUBNITRATE: Two hundred pounds of precipitated chalk was fraudulently sold in packages labeled "Merck's Bismuth Subnitrate." Another lot bore the labels of "Mallinckrodt Chemical Company." Detectives are looking for the seller.

Pharmaceutical Record.

BLUE FLAG: The rootlets often are not removed. In addition it is frequently and sometimes largely intermixed with a rhizome similar in all respects to the official except in color,

which is white. Whether it is merely a color phase, or the rhizome of a different species has not been proven. O. A. FARWELL.

BORAGE: The leaves and even the inflorescence of an allied plant, the Bugloss (*Echium vulgare* L.) have found their way to the drug markets for borage.

The former are rougher and more densely pubescent and the hairs lack the broad disk-like base of the hairs of true borage. The flowers of the Bugloss are bilabiate while those of Borage are regular and rotate. O. A. FARWELL.

BUCHU: Attention is called to the fact that samples labeled as "long," "short" and "oval" buchu leaves offered in the trade have been found to be obtained from species not official in the U. S. P. The "long buchu" proved to be *Empleurum serratulatum*, the "short buchu" *Barosma pulchellum*, and the "oval buchu" *Barosma crenulata*, var. *latifolia*. The flavor of the three adulterants is markedly different from that of the official species. They should not be used in official preparations. DEPARTMENT OF AGRICULTURE.

BURDOCK ROOT: Large quantities of the root of the second year plant are put upon the market; the root at this stage is very woody and useless. O. A. FARWELL.

BUTTERNUT: This drug frequently is the source of much trouble because of the heavy cork on the unpeeled root and of the bark of the larger branches which are used as adulterants. O. A. FARWELL.

CALCIUM GLYCEROPHOSPHATE: A few small shipments contained too large an excess of chloride. H. ENGELHARDT.

CAMPHORATED OIL: Fifty-two samples deficient in camphor. Massachusetts State Board. Estimated by heat, 18.1%, 18.85%, 20.1%, 13.25%. U. S. P. 20%. E. L. PATCH.

CANNABIS INDICA: A very perceptable change is noticeable in this commodity. The percentage of matured seeds in the drug imported from India has greatly increased, probably in many instances beyond the maximum amount allowed by the U. S. P. The drug from the American plant does not answer the pharmacopoeial requirements at all since in most instances it consists of all those parts of the plant in fruiting stage, which cannot be used for the production of hemp. Even the male plant has been gathered and stored for medicinal purposes. The relative values of the crude drug originating in different countries, is still in the debatable stage; the value of the crude drugs may vary according to the time of collection and the part or parts of the plant gathered, but if the preparations made from these variable crude drugs were brought by physiological assay to a uniform standard for the finished product, it is more than probable that this drug as a fertile subject for future discussions of its variableness would immediately drop out of sight. O. A. FARWELL.

We may say that samples of Indian hemp submitted answered all the physiological tests prescribed by the U. S. P. but the samples of domestic hemp were generally far below the requirements. I do not wish to go into details about the rather unreliable physiological assay process required by the U. S. P., but only want to point out that a great deal can be done towards improving this process. Unless a more reliable method can be proposed the physiological assay of Cannabis should be discarded altogether. H. ENGELHARDT.

CAPSICUM: Extractive, alcoholic, 15, 21.6, 23.7, 23, 21.5, 25, 23.5, 25.6; ash, 7, 6.98, 6.9. E. L. PATCH.

CARAWAY SEED: Foreign seeds, 1.15% chaff and dirt; freed from above yields, 6.6% ash. E. L. PATCH.

CASCARA BARK: The adulterant previously mentioned has been identified as the bark of *Prunus padus*. JOURNAL AMERICAN PHARMACEUTICAL ASSOCIATION.

CHALK PRECIPITATED: Assay 94% (U. S. P. 98%) excess of chlorides, 98.85%, 98.85%, 98.35%. E. L. PATCH.

CHAMOMILE: Examination of importations of "Chamomile flowers," *Matricaria chamomilla*, L. have disclosed in some instances that the flowers of dog fennel, *Anthemis cotula* L. have been submitted in amounts up to 25%. The flowers of *Matricaria chamomilla* have naked, hollow receptacles, whereas those of *Anthemis cotula* are solid and chaffy. U. S. DEPARTMENT OF AGRICULTURE.

The flower heads of *Anthemis arvensis*, the field chamomile have been substituted; they are readily distinguished by the persistent chaff and solid receptacle. O. A. FARWELL.

CHENOPODIUM: *Chenopodium album* has been offered in place of the *C. anthelminticum*. Texas appears to be the source of origin. O. A. FARWELL.

CINCHONA: Lots have been offered for entry under names recognized in the U. S. P., but deficient in alkaloids. DEPARTMENT OF AGRICULTURE.

Four shipments of *Cinchona calisaya* and two of red cinchona answered fully the requirements of the U. S. P. H. ENGELHARDT.

Yellow bark 8.05 total alkaloids; red cinchona 7.2%. E. L. PATCH.

Many samples from different sources indicating a wide collection, have been received under the name "Cascarilla;" the bark does not resemble any of the official cinchona barks externally. It may be derived from one or more species of the genus cascarilla. It is said that the cascarilla barks do not contain the cinchona alkaloids. O. A. FARWELL.

COLCHICUM ROOT: Colchicum root is practically unobtainable. Four samples examined were of good quality. H. ENGELHARDT.

0.53%, 0.45%, 0.36%, 0.4%, 0.43%, U. S. P. 0.35%. E. L. PATCH.

CONIUM LEAVES: Parsley leaves have been used as a substitute; also the leaves of *Aethusa cynapium*. O. A. FARWELL.

COD LIVER OIL: One lot very inferior. Refractive index at 17.5° C. 1.4771. Would not stand the fuming nitric acid test. E. L. PATCH.

COD LIVERS: Powdered, 95% volume alcohol extracted 46.85%; 10% volume alcohol extracted 10.3%. Average loss by drying at 100° C. 11.95%. Extract made with 95% volume alcohol is insoluble in 10%, 15% or 20% alcohol. E. L. PATCH.

CUBEB: It is becoming increasingly difficult to obtain a first class quality of cubeb answering the U. S. P. requirements. The stems present are usually excessive; also the peduncled fruits of other species are in more or less evidence. O. A. FARWELL.

DANDELION ROOT: In some instances roots obtained from *Lactuca canadensis* L., *Lactuca spicata* (Lam.) Hitchc., or other species of lactuca have been substituted. The roots of *Taraxacum officinale*, true dandelion, may be distinguished by the concentrically arranged groups of laticiferous vessels and sieve tubes which alternate with whitish inulin-bearing parenchyma. Lactuca root is characterized by its tracheae which are arranged in radial rows, usually one cell wide, alternating with medullary rays, two or three cells wide.

U. S. DEPARTMENT OF AGRICULTURE.

Samples from importations disclosed the presence of 40% of roots which were badly discolored inside and did not show a porous, pale, yellow wood as required by the U. S. P. The appearance suggested that the material had been improperly dried. This fact was confirmed by microscopic examination, showing swollen brownish yellow masses indicating that inulin masses had been partially hydrolyzed and caramelized. Samples containing more than 15% of such dead roots should be rejected. U. S. DEPARTMENT OF AGRICULTURE.

DIGITALIS LEAVES: The domestic drug was generally found to be of very good quality. In connection with the physiological test for this drug I may call attention to the article published by Mr. H. C. Colson of this laboratory in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION 1918, page 73. It was found that the twelve-hour frog test is more reliable than the one-hour official test and the cat test is superior to both of them.

H. ENGELHARDT.

Large quantities of *Digitalis thapsi* were imported under the name of "Spanish Digitalis;" but the substitution was quickly detected and its importation prohibited.

O. A. FARWELL.

Recent work has revealed the fact that American digitalis is as potent and valuable medicinally as any heretofore imported from Central Europe. It has been found that the digitalis plant growing wild in Oregon and Washington needs only harvesting and collecting to be of great assistance to war medical work. *Pharmaceutical Era.*

DITTANY: The European or Cretan dittany has been imported and offered as dittany.

O. A. FARWELL.

(*To be continued.*)

CORRESPONDENCE

UTILIZATION OF INVENTIVE TALENT.

D. W. Brinton, of the U. S. Naval Consulting Board, 15 Park Row, New York City, writes that some of the civilian engineers of this country are now rendering great service to the Government through the agencies of the Council of National Defense, the Naval Consulting Board the National Research Council, and their numerous auxiliary committees, but, unfortunately, only a small proportion of the technical men of this country are so situated that they can go to Washington and engage in this service; therefore, some means of utilizing the patriotism and originative thought of our members had to be devised.

For this purpose the War Committee of Technical Societies has been organized, and it hopes to give the members of the Technical Societies who are obliged to stay at home, an opportunity to use their inventive talent and technical training in the study of the varied problems which arise in the preparation for and prosecution of the war—thus making valuable contributions to the national cause.

The greatest care will be taken to discover and utilize everything of value that may inhere in suggestions and inventions submitted. Not only will they receive studious examination, but when necessary, trials and experiments will be conducted. All inventions which have successfully passed the necessary examinations and tests are turned over to the particular department of the Army and Navy Service, where they may be most profitably utilized.

THE STRONTIUM BROMIDE PRESCRIPTION.

The letter of Dr. S. Solis Cohen, which appears in the August issue, has my attention. I am glad that the doctor has taken the pains to lay his experience before the pharmaceutical profession, for in this way we learn our shortcomings, and are enabled to correct them.

His experience may be regarded as a reflection upon the efficiency of the Board of Pharmacy, which should discover such apparent incompetency in pharmaceutical ranks.

It was at the meeting of the A. Ph. A. in Atlantic City that I listened to an address by Doctor Cohen, in which he led his audience to think that boards of pharmacy seemed to ask questions such as the examinees may not be familiar with. Now, if the type of prescriptions that the doctor has had such inferior pharmacal service from, is in the class he had in mind, then the Pennsylvania Board of Pharmacy must plead guilty, because it is one of its hobbies to feature the principles that are involved in dispensing prescriptions of like character, in every examination.

Notwithstanding criticisms to the contrary, the policy of the Board has not been officious nor over-exacting, hence it does not reject an applicant because he is unable to show himself to be 100 percent perfect in all branches.

As presiding officer of said Board I would be glad to have a consensus of opinion of the medical and pharmacal profession, as to whether or not a failure on the part of an examinee to properly prepare a prescription as cited by Doctor Cohen should warrant rejection, if his record on all other branches were such as would favor a passing grade.

Yours respectfully,

LOUIS EMANUEL.

P. S.—In the interests of a perfect pharmacopoeia, it may not be improper to ask the doctor why he gets better results from the use of strontium bromide of a special brand, than he does from the chemical of the same title of U. S. P. standard of quality, purity and strength.

LOUIS EMANUEL.

PITTSBURGH, PA., August 21, 1918.

THE EDITOR: Noting Dr. Solis Cohen's communication to the JOURNAL regarding the strontium bromide prescription as well as your reply to it, it seems to me that the very tangible reason for an occasional misinterpretation of the quantity of the bromide lies in the fact that

the specified brand of bromide prescribed (probably the Paraf-Javal) is *more often* prescribed and *better known* in the form of a solution. The wide-awake pharmacist, however, discounting the fact that many careless physicians often fail to indicate on their prescriptions the difference between the fluid and solid measurement symbols, ought to be well enough abreast of the times to know that the careful physician, and Dr. Cohen is well known to be in this class, would write for Liquor Stront. Brom., when this was wanted, and would designate the symbolic quantities accordingly. He should also know that there *is* on the market such a product as strontium bromide (Paraf-Javal). I disagree with you, therefore, when you state in your answer that "the brand of the salt has nothing to do with the case." Were it not for this specification Doctor Cohen would not have experienced any trouble whatever, for I believe with you that the Philadelphia druggist in common with the rest of his professional brothers *does* understand the difference between a fluid and a solid(!) ounce.

Yours cordially,

PHILADELPHIA, August 17, 1918. IVOR GRIFFITH.

IMPORTANT NOTICE FOR SCHOOLS AND COLLEGES OF PHARMACY.

The action taken at the Indianapolis Meeting relative to the award of the Fairchild Scholarship for this year is expressed in Recommendation No. 5 of President R. A. Lyman's address, and which reads:

> "That it be the sense of the Conference that Mr. Fairchild could render the greatest service to pharmacy by offering the scholarship to a graduate pharmacy student, in order that he might pursue some research problem for one full school year, in the school of his choice; and further, that this scholarship be awarded on the basis of the applicant's scholastic training, his standing as an undergraduate pharmaceutical student and upon his fitness to do research."

The Committee to whom the matter of formulating a definite plan for awarding the Fairchild Scholarship was referred consists of H. C. Christensen, Chairman, 4149 Vincennes St., Chicago, Ill., Prof. J. W. Sturmer, 145 N. 10th St., Phila., Dr. George C. Diekman, 115 West 68th St., New York, and Dr. R. A. Lyman, c/o The University of Nebraska, Lincoln, Neb.

The Committee has decided that in making the award:

> The ability of the candidate to perform research work be given a value of 50 credit units; the pharmaceutical scholastic record a value of 40 credit units; and the non-pharmaceutical scholastic record (above high school grade) a value of 10 credit units.
>
> Further, that the candidate's ability to perform research work be determined upon evidence of research work previously accomplished, and that such evidence may take the form of a thesis presented at a college of pharmacy, or a paper covering research work carried out at a college, but in the latter case it should be accompanied by a certification from the dean that the paper represents the student's individual work. A published paper covering research work performed by the candidate subsequent to his graduation may also be accepted as evidence—at the discretion of the Committee.

The Committee reports further:

> "It is to be clearly understood that this procedure does not necessarily represent the views of the members of this Committee on Examination on the larger problem of the awarding of the Scholarship, but is merely a practical plan decided upon the basis laid down at the Indianapolis meeting last year."

Schools or Colleges of the American Conference of Pharmaceutical Faculties, therefore having a candidate to present for the Fairchild Scholarship, should at once send his credentials, etc., to Chairman H. C. Christensen, 4149 Vincennes St., Chicago, so as to reach him not later than October 1, in order that the award may be made soon thereafter.

The Chairman of the Fairchild Scholarship Committee would also request that the Schools and Colleges give the matter of the Fairchild Scholarship consideration. As the Schools are perhaps most interested it is requested that all Schools present their views in writing to Secretary Theodore

J. Bradley, of the Conference, c/o Massachusetts College of Pharmacy, Boston, Mass., prior to December 1, 1918, with a view to having him lay before the incoming Fairchild Scholarship Committee these expressions, so that this Committee can be assured of having all Schools interested to the fullest extent when they formulate their plans of award for next year, and with the hope these will establish the method of award hereafter.

We thank you for giving both these matters your prompt consideration. The first should have immediate attention.

Respectfully,
The Fairchild Scholarship Committee.

CHANCE IN COLLEGE OR VOCATIONAL SCHOOLS FOR ALL BOYS OF 18.

All of our readers have by this time read of the opportunities that are to be given young men to enter schools or colleges during the first year or longer of their enlistment. Conferences have been held on the matter with school officials and the War Department. What opportunity pharmacy students will have we are not advised, but it is probable that satisfactory arrangements will be made.

A letter by Colonel Robert I. Rees reads:

"All young men who were planning to go to school this fall should carry out their plans to do so. Each should go to the college of his choice, matriculate and enter as a regular student.

"As soon as possible after registration day, probably on or about October 1, opportunity will be given for all the regularly-enrolled students to be inducted into the Students' Army Training Corps at the schools where they are in attendance.

"The student, by voluntary induction, becomes a soldier in the United States Army, uniformed, subject to military discipline and with the pay of a private. They will simultaneously be placed on full active duty, and contracts will be made as soon as possible with the colleges for the housing, subsistence and instruction of the student soldiers."

There are no exceptions or discriminations. The same rule applies to all boys of eighteen who are well enough educated to pass the entrance requirements of the colleges and universities.

Boys who can not pass the entrance requirements to colleges and who have only grammar school education, will have opportunity to apply for admission to vocational schools.

OPPORTUNITY IN HAITI FOR AMERICAN PHARMACISTS.

AMERICAN PHARMACEUTICAL ASSOCIATION:

The declaration of war upon Germany by the Republic of Haiti has led to the sequestration of most of the German firms doing business in the Republic. Prior to the declaration practically the entire drug business was controlled by Germans whose establishments have now been closed, with the result that at the present time the few remaining pharmacists, Haitian-owned, are worked beyond their capacity with limited stocks and more or less incompetent clerks.

As the head of the Public Health Service of Haiti I am exceedingly anxious to see a dependable trade in pharmaceuticals established in the island, and as an American I am anxious that the trade should in future be dominated by Americans, thus insuring the sale of American products and the establishment of the drug business on an American basis. The drug business here has always been a thriving and exceedingly profitable one, and this offers an exceptional opportunity. Sufficient capital would of course be required.

(Capable, wide-awake American pharmacists are desired.)

N. M. LEON,
Surgeon, U. S. Navy,
Sanitary Engineer of Haiti.

Port au Prince,
Haiti,
August 16, 1918.

COUNCIL BUSINESS

COUNCIL MEETINGS.

THIRD SESSION OF THE COUNCIL, 1917–1918.

The Third Session of the Council of the American Pharmaceutical Association for 1917–18 was held at the Congress Hotel, Chicago, on Tuesday, August 13, 1918, at 7.30 P.M.

The meeting was called to order at 7.30 P.M. by Chairman L. C. Hopp.

Present: Messrs. L. C. Hopp, H. V. Arny, T. J. Bradley, Jacob Diner, Clair A. Dye, R. P. Fischelis, J. W. England, E. N. Gathercoal, J. G. Godding, S. L. Hilton, C. B. Jordan, L. E. Sayre, L. A. Seltzer, Clyde M. Snow, Dr. F. E. Stewart, Dr. Henry M. Whelpley, F. J. Wulling, E. F. Kelly, E. G. Eberle, W. B. Day, J. A. Koch and Jeannot Hostmann.

The reading of the minutes of the second session for 1917–18, held at the Hotel Claypool (Indianapolis), on September 1, 1917, was, on motion, dispensed with. (See p. 1104, December Journal, A. Ph. A., 1917.)

Announcement was made of the passage of *Motion No. 30* (*Election of Members, Nos. 269 to 298, inclusive*) and of *Motion No. 31* (*Establishment of Wilkes-Barre Branch, A. Ph. A.*).

Applications for membership from Nos. 299 to 395, inclusive, were presented and favorably acted upon. The list was:

No. 299. Patrick Joseph Biesty, 12 Haverford St., Jamaica Plain, Mass. Awarded prize in Massachusetts College of Pharmacy. Rec. by E. H. LaPierre and Theo. J. Bradley.

No. 300. Arthur E. Fechter, 521 North Clark St., Chicago, Ill., rec. by E. P. Noennam and Wm. B. Day.

No. 301. Leon Nahabed Charkoudian, 252 Worthington St., Springfield, Mass. Awarded Prize in Massachusetts College of Pharmacy. Rec. by Theo. J. Bradley and John G. Godding.

No. 302. Argiris Georges Sampanis, 179 Warren Ave., Boston, Mass. Awarded Prize in the Massachusetts College of Pharmacy. Rec. by Howard H. Smith and Theo. J. Bradley.

No. 303. Arthur Nutter Brown, 27 Warwick St., Boston, Mass. Awarded Prize in the Massachusetts College of Pharmacy. Rec. by John G. Godding and Theo. J. Bradley.

No. 304. Roscoe Tracy Burrows, Noank, Ct. Awarded Prize in the Massachusetts College of Pharmacy. Rec. by C. Herbert Packard and Theo. J. Bradley.

No. 305. Ewell Ashby Brugh, Altavista, Va., rec. by W. F. Rudd and Philip F. Fackenthall.

No. 306. Julian Lichtenstein, 17th & Main Sts., Richmond, Va., rec. by W. F. Rudd and J. E. Jackson.

No. 307. Horace C. Littlejohn, Leesburg, Va., rec. by W. F. Rudd and J. E. Jackson.

No. 308. Frank Schrage, 2200 N. Clark Street, Chicago, Ill., rec. by E. P. Noennam and Wm. B. Day.

No. 309. Leon Clifton Ellis, 2 Market Street, Lynn, Mass., rec. by John G. Godding and Theo. J. Bradley.

No. 310. Roger E. Monroe, 500 W. Broad Street, Richmond, Va., rec. by W. F. Rudd and E. Brandis.

No. 311. Charles T. Hull, 141 Dixwell Ave., New Haven, Conn., rec. by J. W. England and E. G. Eberle.

No. 312. Frank Taylor Stone, 1210 Pa. Ave., N. W., Washington, D. C., rec. by J. C. Peacock and J. W. England.

No. 313. Bert Alexander Smyser, 1400 Pa. Ave., S. E., Washington, D. C., rec. by Redmond Mayo and S. L. Hilton.

No. 314. E. Paul Gibney, 146 W. Kinzie Street, Chicago, Ill., rec. by William Gray and Wm. B. Day.

No. 315. Charles Reynolds Rhodes, Hyndman, Pa., rec. by Robert P. Fischelis and Charles H. LaWall.

No. 316. Archie L. Tufts, 1359 St. Nicholas Ave., New York, N. Y., rec. by Hugo Kantrowitz and E. G. Eberle.

No. 317. John J. McClugage, 1140 E. 63rd St., Chicago, Ill., rec. by Wm. B. Day and M. A. Miner.

No. 318. George M. Bennett, 135–37 W. Main Street, Urbana, Ill., rec. by Wm. B. Day and Jas. H. Beal.

No. 319. Samuel Morgan Evans, 408 Luzerne Ave., W. Pittston, Pa., rec. by P. Henry Utech and Wm. B. Day.

No. 320. Donald Cameron Margerum, 30 S. 10th St., Philadelphia, Pa., rec. by Charles H. LaWall and J. C. Peacock.

No. 321. Ernest Louis Naviaux, 26 S. Crawford Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 322. Charles Hugo Grund, Jr., 3511 Archer Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 323. Charles G. Knight, 338 E. 51st Street, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 324. F. G. J. Stieber, 33rd Street & Indiana Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 325. Miguel A. Veve, Box 96, Fajardo, Puerto Rico., rec. by Rudolph Wirth and Robert C. Pursell.

No. 326. Luis Mulet, Avenue 11th, August No. 74, Mayaguez, Porto Rico., rec. by Rudolph Wirth and Robert C. Pursell.

No. 327. Carl Abrahamson, 540 W. Randolph Street, Chicago, Ill., rec. by O. F. Fuller and Wm. B. Day.

No. 328. Charles Fuller, 540 W. Randolph Street, Chicago, Ill., rec. by O. F. Fuller and Wm. B. Day.

No. 329. Albert A. Kurrasch, 301 W. 47th Street, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 330. Edward T. Hahn, 1242 N. 53rd St., Philadelphia, Pa., rec. by J. C. Peacock and Bertha L. Peacock.

No. 331. Arthur W. Stadelmann, 1553 W. 69th St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 332. Jos. Parks Thomas, 1916 W. Chestnut Street, Altoona, Pa., rec. by J. A. Koch and and John H. Wurdack.

No. 333. John Krizan, 4200 West Van Buren St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 334. Ralph Milton Eberly, 27 N. Broadway, Aurora, Ill., rec. by Wm. B. Day and L. C. Staudt.

No. 335. L. N. Benton, 31 So. Broadway, Aurora, Ill., rec. by Wm. B. Day and L. C. Staudt.

No. 336. George Zoeller, 1557 West Chicago Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 337. Louis A. Elisburg, 6260 Champlain Ave., Chicago, Ill., rec. by J. W. England and E. G. Eberle.

No. 338. Charles E. Graham, 403 East 8th St., Kansas City, Mo., rec. by Henry D. Lewellyn and M. W. Whitney.

No. 339. Felix Wm. McClerkin, 700 Main St., Little Rock, Ark., rec. by Frank Schachleiter and H. M. Whelpley.

No. 340. John George Mick, 2843 Indiana Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 341. Carroll E. Wood, 201 9th Ave., S. W., Roanoke, Va., rec. by Maud Lambert and W. F. Rudd.

No. 342. Marshall L. Bize, 7th Avenue, Ybor City, Fla., rec. by M. M. Taylor and E. Berger.

No. 343. Alexander C. Peska, 4332 Thomas St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 344. Charles A. Locke, Brookings, S. D., rec. by Wm. B. Day and J. W. England.

No. 345. Anna Schultz, 2 East Main Street, Tremont, Pa., rec. by Charles H. LaWall and Josiah C. Peacock.

No. 346. Henry Clay Tindall, 217 E. Broadway, Excelsior Springs, Mo., rec. by Paul L. Hess and H. M. Whelpley.

No. 347. Paul Gschwender, c/o Highland Park Sta., Des Moines, Iowa. Awarded Waterbury Prize Highland Park College of Pharmacy. Rec. by E. O. Kagy and H. M. Whelpley.

No. 348. John Gustav Anderson, Wadena, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 349. A. J. Kline, 2550 Bloomington Ave., Minneapolis, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 350. E. E. Krueger, Glenwood, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 351. Bernard Mamer, Welcome, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 352. L. Miner Herbert, Worthington, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 353. Dillwyn W. Jones, Mabel, Minn., r c. by E. L. Newcomb and F. J. Wulling.
No. 354. John Nelson, Lake Park, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 355. Louis Sidney Stein, City Drug Store, Hibbing, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 356. Martin Moliter, 702 St. Germain St., St. Cloud, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 357. Henry C. Micklesen, Hudson, Wisc., rec. by E. L. Newcomb and F. J. Wulling.
No. 358. Edward L. Hoffman, 215 So. Broadway, Rochester, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 359. Nels J. Sylvander, 423 W. 3rd St., Red Wing, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 360. G. E. Lammon, 606 Laurel St., Brainerd, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 361. Frank A. Steiner, 107 South Front St., Mankato, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 362. John T. Johnson, 105 Lincoln Ave., E., Fergus Falls, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 363. Lauritz M. Koefod, Granite Falls, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 364. Andrew W. Clay, Grygla, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 365. Horace Samuel Conger, Ogilvie, Minn., rec. by E. L. Newcomb and Chas. L. Huber.
No. 366. P. H. Claydon, St. James Medical Block, Red Wing, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 367. Gustave Jules Demars, Fertile, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 368. Edmund I. Casey, Chisholm, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 369. Del Delos Turner, c/o College of Pharmacy, Univ. of Minn., Minneapolis, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 370. Fred G. Kustermann, 1517 Como Ave., S. E., Minneapolis, Minn., rec. by E. L. Newcomb and Chas. H. Kuhn.
No. 371. Daniel B. Dooley, 758 Adams St., N. E., Minneapolis, Minn., rec. by E. L. Newcomb and Chas. H. Kuhn.
No. 372. David K. Bryant, 302 Conley Ave., So., Thief River Falls, Minn., rec. by Chas. H. Huhn and E. L. Newcomb.
No. 373. Bernard C. Rotegard, Hartland, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 374. John E. Goldner, 1854 Central Ave., Minneapolis, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 375. Louis James Aberwald, 940 Marshall Ave., St. Paul., Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 376. Richard T. Dukelow, Gilbert, Minn., rec. by Chas. H. Huber and E. L. Newcomb.
No. 377. Charles F. Karnofsky, 1823 Bryant Ave., No., Minneapolis, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 378. Oscar William Seaquist, Good Thunder, Minn., rec. by E. L. Newcomb and Chas. H. Huber.
No. 379. Norman Carl Schreiter, Red Lake Falls, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 380. John Herman Scott, Eden Valley, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 381. Theodore A. Arneson, 413 So. 6th St., Montevido, Minn., rec. by E. L. Newcomb and F. J. Wulling.
No. 382. Carl A. Warner, 8201 Broadway, Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.
No. 383. Walter F. Hagemeister, 13800 St. Clair Ave., Cleveland, Ohio., rec. by H. F. Guenther and H. V. Arny.

No. 384. Harlin Eggleston Mason, Main St., Smithville, Tenn., rec. by T. J. Shannon and Wm. B. Day.

No. 385. Amelia Adelaide Sonnenburg, 1921 W. Lexington St., Baltimore, Ind., rec. by E. F. Kelly and H. P. Hynson.

No. 386. Russell Myers Stewart, Wakarusa, Ind. Awarded Prize in Pharmacy, School of Pharmacy of University of Illinois. Rec. by C. M. Snow and Wm. B. Day.

No. 387. Warren Dale Morrison, 6026 Drexel Ave., Chicago, Ill., rec. by M. A. Miner and Wm. B. Day.

No. 388. Florian Joseph Schmidt, 7904 Stony Island Ave., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 389. Hugh Benton Honens, 425 Harrison, Oak Park, Ill., rec. by E. N. Gathercoal and Wm. B. Day.

No. 390. Lotis Loma Huston, 200 Harrison St., Oak Park, Ill., rec. by E. N. Gathercoal and Wm. B. Day.

No. 391. Alfred Reuben Utt, Glen Ellyn, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 392. Nols N. Brakke, McVille, N. D., rec. by W. P. Porterfield and Wm. B. Day.

No. 393. S. P. Kogon, 1852 George St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 394. Roy Gould Cook, 61 Broadway, Fargo, No. Dak., rec. by W. P. Porterfield and Wm. B. Day.

No. 395. Sebastian Fabian Schick, Suite 317, Woodruff Bldg., Joliet, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

The Report of the Secretary of the Council was presented and approved. It was as follows:

Members of the Council.

GENTLEMEN:

The Council held sessions at the Indianapolis (1917) meeting and has transacted its business by mail since.

Twenty Council Letters have been issued covering 45 pages and 31 motions.

A synopsis of the motions of the Council is attached.

The members elected to date number 395; the number elected last year by the first session at Indianapolis was 310.

The membership of the Council numbers 40, of which 17 are representatives of local branches.

A number of changes of membership have taken place. Charles Holzhauer and Wm. L. Dewoody are deceased. E. F. Kelly has succeeded H. Engelhardt.

There are 21 local branches, including the Wilkes-Barre Branch, permission for the establishment of which was granted last month, of which 17 at present have Council representatives; those not having are West Virginia, Montana, Wilkes-Barre and Cuba.

The three members of the Council elected by mail in November last for 1918–19 were: Caswell A. Mayo, New York; Charles E. Caspari, St. Louis; and Charles Holzhauer (since deceased).

Respectfully submitted,

J. W. ENGLAND,
Secretary of the Council.

August 12, 1918.

SYNOPSIS OF MOTIONS OF THE COUNCIL, 1917–18.

Motion No. 1. That $100 be appropriated for the expenses of the Committee on Membership. Carried.

Motion No. 2. That the sum of $25 be appropriated towards the expenses of the American Joint Committee on Horticultural Nomenclature. Carried.

Motion No. 3. That $10 be appropriated for an organization-membership for the American Pharmaceutical Association in the American Metric Association. Carried.

Motion No. 4. That an additional appropriation of $400 for the Year Book, 1915, Vol. 4, be made. Carried.

Motion No. 5. That an appropriation of $75 be made for the purchase of buttons and pins. Carried.

Motion No. 6. Election of members Nos. 1 to 19, inclusive. Carried.

Motion No. 7. That a special Committee on Research be appointed. Carried.

Motion No. 8. That the Council chairman and the Association president join in the appointing of the Special Committee on Research. Not carried.

Motion No. 9. That a chairman of the Special Committeee on Research be appointed and that he be asked to recommend names for the remaining positions on the committee; to be voted upon by the Council. Carried.

Motion No. 10. That there be placed in nomination for election by the Council fifteen nominees, as follows: The five members of the Scientific Section Committee, the five members of the Council Committee on Financial Control of N. F., and five additional nominees to be named by the Council; from these fifteen nominations the ten members are to be elected. Not carried.

Motion No. 11. Election of members Nos. 20 to 27, inclusive. Carried.

Motion No. 12. That the 66th annual convention of the American Pharmaceutical Association be held in the week beginning August 12, 1918. Carried.

Motion No. 13. That E. N. Gathercoal, of Chicago, be elected as Local Secretary for 1918. Carried.

Announcement of the death of Charles Holzhauer, President of the American Pharmaceutical Association, on November 19, 1917.

Motion No. 14. That proposed budget of appropriations for 1918 be approved. Carried.

PROPOSED BUDGET OF APPROPRIATIONS FOR 1918.

Appropriations for General Expenses:				
No. 1.	Salaries		$ 6,150	
No. 2.	Printing, Postage and Stationery		1,000	
No. 3.	Clerical Expenses, Secretary's Office		416	
No. 4.	Miscellaneous Expenses		200	
No. 5.	Stenographers		350	
No. 6.	Traveling Expenses		150	
No. 7.	Committee on Membership		250	
No. 8.	Committee on Unofficial Standards		100	
No. 9.	Year Book		3,000	
No. 10.	Premium on Treasurer's Bond		50	
No. 11.	National Drug Trades Conference		200	
No. 12.	Section on Scientific Papers		25	
No. 13.	Section on Education and Legislation		25	
No. 14.	Section on Commercial Interests		25	
No. 15.	Section on Practical Pharmacy and Dispensing		25	
No. 16.	Section on Historical Pharmacy		25	
No. 17.	Women's Section		25	
No. 18.	National Syllabus Committtee		25	
No. 19.	Committee on Recipe Book		50	
			$12,091	$12,091
Appropriations for Open Accounts:				
No. 20.	Journal		$ 6,250	
	(*a*) Publication	$5,000		
	(*b*) Clerical Expenses	800		
	(*c*) Postage and Stationery	300		
	(*d*) Freight, Drayage, Miscellaneous	150		
No. 21.	National Formulary		1,000	
No. 22.	Badges and Bars		50	
No. 23.	Certificates		50	
			$ 7,350	7,350
				$19,441

Motion No. 15. That an additional appropriation of $28.72 be made for Women's Section for 1916–17. Carried.

Motion No. 16. Election of members Nos. 28 to 62, inclusive. Carried.

Announcement of the death of Joseph P. Remington, past President of the American Pharmaceutical Association, on January 1, 1918.

Motion No. 17. Recommendation for membership of Committee on Research. Carried.

The Committee on Research designated was: Harry V. Arny, Chairman (appointed by the Chairman of the Council), George M. Beringer, Julius A. Koch, Henry Kraemer, Charles H. LaWall, Edward Kremers, Wilbur L. Scoville, Alviso B. Stevens, Frederick B. Power and Henry Milton Whelpley.

Motion No. 18. Election of members Nos. 63 to 68, inclusive. Carried.

Motion No. 19. Election of members Nos. 69 to 84, inclusive. Carried.

Motion No. 20. Grant of Request of Smithsonian Institute for Journals. Carried.

Motion No. 21. Election of members Nos. 85 to 114, inclusive. Carried.

Motion No. 22. That the program for the 1918 Annual Meeting as finally revised be approved. Carried.

Motion No. 23. Election of members Nos. 115 to 133, inclusive. Carried.

Motion No. 24. That the Council grant the request of the New York Branch for the consent and moral support of the parent organization in the awarding of the proposed Joseph P. Remington Medal (C. L. No. 14). Carried.

Motion No. 25. Election of members Nos. 134 to 144, inclusive. Carried.

Motion No. 26. Election of members Nos. 145 to 204, inclusive. Carried.

Motion No. 27. That the Treasurer be directed to invest in Liberty Bonds, two thousand dollars or more, in addition to the ten thousand dollars already invested in such bonds, for account of the American Pharmaceutical Association Research Fund. Carried.

Motion No. 28. Election of members Nos. 205 to 247, inclusive. Carried.

Announcement of the death of William L. Dewoody, Honorary President of the American Pharmaceutical Association.

Motion No. 29. Election of members Nos. 248 to 266, inclusive. Carried.

Motion No. 30. Election of members Nos. 269 to 298, inclusive. Carried.

Motion No. 31. Granting of Petition to Establish Wilkes-Barre Branch, A. Ph. A. Carried.

Attention was called to the rising costs of the clerical and other work of the officials of the Association and the subject was discussed at length.

On motion of H. V. Arny, seconded by Dr. F. E. Stewart, the subject was referred to the Committee on Finance to consider and report upon later to the Council.

NATIONAL DRUG TRADE CONFERENCE.

President James H. Beal, of the National Drug Trade Conference, has appointed the following important committees: Committee on Pharmaceutical Corps, Samuel C. Henry, chairman; Charles J. Lynn and S. L. Hilton. Committee on Alcohol Legislation, Charles M. Woodruff, chairman; Charles A. West and James F. Finneran. Committee on Anti-Narcotic Legislation, John C. Wallace, chairman; Fred K. Fernald and Eugene C. Brokmeyer. Committee on Formulas and Labels, Harry B. Thompson, chairman; C. Mahlon Kline and Charles M. Woodruff.

EDITORIAL NOTES

Editor: E. G. EBERLE, Bourse Building, Philadelphia, Pa.
Committee on Publication: J. W. ENGLAND, *Chairman;* G. M. BERINGER, CASWELL A. MAYO, H. B. MASON, E. L. NEWCOMB, and the Editor-in-Chief of the JOURNAL, General Secretary, Treasurer and Reporter on the Progress of Pharmacy, *ex-officio.*
Editorial Office: 253 Bourse Building, Philadelphia, Pa.

TREATMENT OF WAR WOUNDS BY MAGNESIUM SULPHATE

According to the *Scientific American*, Doctors Morrison and Tulloch now obtain very good results in the treatment of wounds by the use of the following solution which is sterilized by heating in a digester of the usual type: Magnesium sulphate, 400 parts, dissolved in a mixture of 100 parts glycerine and 300 parts boiling water. In the treatment of a fresh wound, this is opened widely and a 5 percent phenol solution is applied for 24 hours, after which the preceding solution is applied by means of compresses. The solution is renewed every 12 hours in the case of suppurated wounds. The pus disappears in two or three days, the scars become detached and the wound is now a bright red color. Growth of the epithelium is rapid, and the treatment can be continued until the wound is entirely healed. The solution should be employed in the above strength, for it is found that weaker solutions are not sufficiently active in the cure. As to the method of action which enters in here, this takes place by osmose, as in the case of Wright's solution. It will be remembered that the latter contains 5 parts citrate of soda and 50 parts salt per 1,000 parts water. Magnesium sulphate, when thus employed, is said to be painless. As it is not absorbed by the system, it cannot exert a harmful action on the white corpuscles contained within the granulations. It has a specific destructive action upon various microbes such as the coli and pyocyanic bacillus.

INCREASING THE SOLUBILITY OF BORIC ACID BY MEANS OF SODIUM BORATE.

H. L. Harris communicates to us that the research chemist of the Pacific Coast Borax Company advises that 12 parts of borax and 13 parts of boric acid will dissolve in 75 parts of water, thus making a solution containing the equivalent of 19 percent of boric acid.

THE CONVERSION OF SUGAR IN SYRUP TO INTENSIFY ITS SWEETENING POWER.

J. J. Willaman suggests the following formula for a syrup containing invert sugar: To 10 pounds of granulated sugar, four and one-half pints of water and one-fifth of an ounce of tartaric acid. The solution is boiled slowly in a covered vessel for from thirty to thirty-five minutes, taking care to discontinue boiling before the syrup darkens. This will yield about 14 pounds of a syrup, which the author states has pound for pound the same sweetening power as sugar. The calculation is made on the basis that 105.24 pounds of invert sugar possesses the sweetening power of 135 pounds of cane sugar.

THE GLYCERIN SITUATION.

Officials in the Food Administration, War Industries Board, and elsewhere in the war work establishments, explain that it is not a question of getting fats to make glycerin, but the making of glycerin and disposing of the accompanying products, such as soap. They point out that there is a shortage of storage capacity at the plants, and that in the manufacture of glycerin the other materials have to be used up and a market provided for the by-products, which were the principal products before the war, or else there will be just so much economic waste. The situation in regard to glycerin is now very promising, they say, and no alarm need be felt if the industry continues to coöperate as it has been doing.

The increase in the production of crude glycerin through recovery of grease from garbage seems to be making some progress.

DR. LUCIUS P. BROWN REINSTATED.

Director L. P. Brown, of the New York City Bureau of Foods and Drugs, has been reinstated, which is good proof that the charges against his administration lacked substantiality. One charge against Doctor Brown was in substance that he recognized the ability, efficiency and creditable work of his

assistants, who by their faithful service gave greater latitude for the Director to carry out reforms and broaden the scope of he work of his department. The Board of Health states: "It is fortunate, indeed, that these subordinates were so capable."

Robert P. Fischelis, ex-chairman Section on Commercial Interests, A. Ph. A., is now in the Chemical Welfare Service of the U. S. Army. He is stationed at the Control Laboratory of the Gas Defense plant, Long Island City, N. Y.

Ensign John Jay Schieffelin, son of Dr. Wm. Jay Schieffelin, was recently commended for his service in directing an American destroyer to a German U-boat. Ensign Schieffelin is pilot of a U. S. seaplane.

SOCIETIES AND COLLEGES.

ENTERTAINMENTS OF THE CHICAGO MEETING A. PH. A.

It is always a difficult matter to mention all who contribute to the hospitalities and enjoyments of a convention. So the safe plan will be followed in generalization by giving credit for the complete success of this part of the program to Chairman Charles E. Matthews, Local Secretary E. N. Gathercoal and their host of able and splendid co-workers. It should also be said that the good ladies contributed in many ways even to the extent of serving the luncheon on the Municipal Pier and under the auspices of the Chicago Retail Druggists' Association.

The President's reception was followed by a dance and refreshments. Secretary Day introduced the guests and members to President Dohme and Mrs. Charles Matthews, President-elect, and Mrs. LaWall.

The alumni absorbed the spirit of the times and met in one room for the annual banquet. So pleasing was the fraternization that the same idea will likely be continued.

To speak of the Round Table Luncheon in adequate words would require columns instead of the few lines here possible. Corresponding Secretary Wilhelm Bodemann presided and flung typical Bodemann badinage to the assembled and was never at a loss to exhibit the good-fellowship which characterizes the Chicago Veteran Druggists' Association. Charles Matthews was the birthday child. Honorary President O. F. Fuller occupied the seat near to the toastmaster. His welcome to the guests exhibited his geniality and how to be young at eighty.

The automobile drive took the visitors over about 35 miles of Chicago's famous boulevards. The dinner of the evening was presided over by James W. Morrisson as toastmaster and the speakers were Ex-President A. R. L. Dohme, President Charles H. LaWall, Harrison B. Riley and Dr. W. A. Evans. Music and song added to the enjoyment of the closing event of Chicago's entertainments.

The arrangements throughout were as nearly perfect as possible and even the weather, with the exception of that of the first two days, was delightful.

This brief report would be incomplete without reference to the daily issues of the *Western Druggist*. Appreciation was voiced by the members and shown each morning by their eagerness to secure copies of the publications.

THE REGISTRATION LIST OF THE CHICAGO CONVENTION, A. PH. A.

Aberwald, F. J., St. Paul.
Abrahamson, Carl A., and Mrs., Chicago.
Ahlborn, Frank H., and Mrs., Chicago.
Anderson, Wm. C., and Mrs., Brooklyn.
Antonow, Sam'l L., Chicago.
Arndt, E. J., Chicago, Ill.
Arny, H. V., New York City.
Avery, Chas. H., and Mrs., Chicago.
Bagley, Anna G., Miss., Columbus, O.
Beal, J. H., Urbana, Ill.
Becker, I. A., Chicago.
Bell, Franklin, Chicago.
Benhard, A. H., Great Lakes, Ill.
Benkie, John G., Kouts, Ind.
Bennett, Geo. M., and Mrs., Urbana, Ill.
Berger, Ernest, Tampa, Fla.
Berger, Louise M., Chicago.
Bibbins, Francis E., Indianapolis.
Bingham, W. E., Tuscaloosa, Ala.
Blakeslee, L. G., St. Louis.
Block, Mitchell, Excelsior Springs, Mo.
Blocki, John, Chicago.
Bodemann, Wilhelm, Chicago.
Boerner, Emil L., Iowa City, Ia.
Bradley, Theo. J., Boston.
Breves, Rudolph, Dr., Waukegan, Ill.
Brill, J. P., Chicago.
Buss, Oliver C., Chicago.
Bye, Mortimer, Detroit.
Byrnes, Geo. R., Great Lakes, Ill.

Campbell, F. B., Chicago.
Carleton, Chas. G., Washington, D. C.
Carter, Edgar B., Indianapolis, Ind.
Caspari, Chas. E., St. Louis.
Clark, A. H., Chicago.
Claus, Otto F., M.D., and Mrs., St. Louis.
Clayton, Chas. J., Denver, Colo.
Combs, Delta E., Chicago.
Cooper, Zada M., Miss, Iowa City, Iowa.
Cousins, W. H., Dallas, Tex.
Christensen, H. C., and Mrs., Chicago.
Christensen, Vera Peck, Miss, Chicago.
Crain, G. L., Great Lakes, Ill.
Crowley, Jas. A., and Mrs., Chicago.
Culley, John, Ogden, Utah.
Day, Elsie, Lincoln, Nebr.
Davy, Edward R., Columbus, O.
Day, W. B., and Misses Helen and Charlotte, Chicago.
Deer, J. C., Miss, Chicago.
Denton, W. S., Beardstown, Ill.
Diekman, Geo. C., New York City.
Diner, Jacob, New York City.
Dohme, Dr. A. R. L., Baltimore, Md.
Doolittle, R. E., Chicago.
Dorsey, Edward, and Mrs., Ottawa, Kansas.
Dowling, Oscar, New Orleans, La.
Druehl, Amanda L., Chicago.
Dubsky, Frank J., Chicago.
DuMez, A. G., Washington, D. C.
Dye, C. A., Columbus, O.
Eberle, A. R., Milwaukee, Wis.
Eberle, E. G., and Mrs., Philadelphia, Pa.
Eberle, H. T., Watertown, Wis.
Echols, R. T., Valparaiso, Ind.
Ekstrand, F. W., Salina, Kans.
Eldred, Frank R., Indianapolis.
Elsner, F. H., Chicago.
Elson, J. R., Wellsburg, W. Va.
Elvig, Henry M., Valparaiso, Ind.
England, J. W., and Mrs., Philadelphia, Pa.
Engelhard, G. P., Chicago.
Englehardt, H., Baltimore, Md.
Esau, Fred, and Mrs., Milwaukee, Wis.
Ewing, Clare Olin, and Mrs., Washington, D. C.
Ewing, S. E., Creston, Neb.
Falkenhainer, Al., Algona, Iowa.
Falkenhainer, Chas., and Mrs., Dubuque, Ia.
Fantus, Bernard, and Mrs., Chicago.
Farwell, O. A., Columbus, O.
Fechter, A. E., Chicago.
Figgis, W. W., New York.
Fischelis, Robert P., Philadelphia, Pa.
Fisler, O. L., Chicago.
Forbrich, Jos. F., and Mrs., Chicago.
Ford, C. M., Cambridge, Mass.
Ford, Marjorie, Miss, Denver, Colo.
Francis, J. M., Detroit, Mich.
Freericks, Frank H., Cincinnati, O.
Fry, Herman, Chicago.
Fuller, O. F., Chicago.
Gathercoal, E. N., Oak Park, Ill.
Gayle, J. W., Frankfort, Ky.
Genz, Geo. L., Chicago.
Gietner, Chas. J., St. Louis, Mo.
Ginsburg, Sylvia, Miss, Chicago.
Glover, C. C., Ann Arbor, Mich.
Godding, John G., Boston.
Gordin, H. M., Chicago.
Gordon, Jean, Miss, Chicago.
Gray, M. M. Mrs., Chicago.
Gray, Wm., and Mrs., Chicago.
Gregg, Thos. D., Harrisburg, Ill.
Gregory, Louise F., Mrs., Buffalo, N. Y.
Gregory, Willis G., Buffalo, N. Y.
Guenther, H. F., Cleveland, O.
Haas, G. H., Chicago, Ill.
Haerring, Geo. V., and Mrs., Chicago.
Hagemeister, W. F., Cleveland, O.
Hamilton, H. C., Detroit, Mich.
Handy, John A., Buffalo, N. Y.
Hankey, William T., Cleveland, O.
Harris, Daisy M., Miss, Chicago.
Hatfield, Frank D., and Mrs., Chicago.
Hatfield, W. H., Mrs., Chicago.
Haussamen, H. L., Grafton, N. D.
Henry, S. C., and Mrs., Chicago.
Hess, Paul L., Kansas City, Mo.
Hilton, S. L., Washington, D. C.
Hobart, A. W., Mrs., Chicago.
Hoelzer, A., Chicago.
Hoelzer, B. O. A., and Mrs., Chicago.
Hogan, W. C., Atkins, Ark.
Holliday, F. E., New York City.
Holphoefer, H. J., Chicago.
Honorof, P., and Mrs., Gary, Ind.
Hoover, Geo. D., Chicago.
Hopp, Lewis C., Cleveland, O.
Horlick, A. J., Racine, Wis.
Hostmann, Jeannot, Hoboken, N. J.
Hottinger, Otto, Chicago, Ill.
Hulskamp, Clara, Louisville, Ky.
Hunsche, Fredk., Chicago, Ill.
Hynson, Henry P., Baltimore, Md.
Inman, F. T., Jr., Detroit.
Irvine, E. D., and Miss Lois, Chicago.
Jennings, Ralph C., Chicago.
Jordon, C. B., Lafayette, Ind.
Judisch, Geo., Ames, Iowa.
Kagy, E. O., Des Moines, Ia.

Kantrowitz, Hugo, New York.
Katz, Helen B., Miss, Chicago.
Kebler, L. F., Dr., and Miss Ida E., Washington, D. C.
Kelly, E. F., Baltimore, Md.
Kenaston, H. R., Mrs., Bonesteel, S. Dak.
Kettler, Ernest, Chicago.
Kleinman, J. H., Griffith, Ind.
Knight, Chas. G., Chicago, Ill.
Koch, J. A., and Misses Florence and Elsa, Pittsburgh.
Kolb, Philip J., Chicago.
Kolb, P. J., Mrs., Chicago.
Kraemer, F. W., and Mrs., Chicago.
Kraemer, Henry, Ann Arbor, Mich.
Kremers, Edward, Madison, Wis.
Larsen, L. P., Chicago.
Larson, Martin, Calender, Ia.
LaWall, Chas. H., and Miss Millicent R., Philadelphia.
Lehmann, E. S., Mrs., Chicago.
Lehmann, Rob't H., New York, N. Y.
Lewton, F. L., Washington, D. C.
Liddy, Schreiner J., Mrs., Batavia, Ill.
Light, Isam M., and Mrs., Chicago.
Lindvall, Gus, and Mrs. and Frederick, Moline, Ill.
Lloyd, John Uri, Cincinnati, O.
Lutz, C. W., Ottawa, Ill.
Lyman, Rufus A., Lincoln, Nebr.
Maines, E. L., Brooklyn, N. Y.
Mansfield, Wm., Albany, N. Y.
Mares, F. M., Chicago.
Mason, Harry B., Detroit, Mich.
Mathieson, H. C., and Mrs. and Miss Maryland, Chicago.
Matthews, Chas. E., and Mrs., Chicago.
McGuire, Joseph, Notre Dame, Ind.
McWilliams, H. B., Washington, Ind.
Meissner, F. W., and Mrs., LaPorte, Ind.
Mentz, Otto H., and Mrs. Chicago.
Meredith, H. Lionel, Hagerstown, Md.
Merrell, Chas. G., Cincinnati, O.
Metzger, Fred W., Springfield, Ill.
Meyer, Frank B., Gary, Ind.
Meyer, G. A., Mrs., Chicago.
Meyer, John C., Chicago.
Miller, Albert, and Mrs., Chicago, Ill.
Miller, Herbert C., Portland, Ore.
Miner, M. A., and Miss Eleanor S., Chicago.
Moffett, H. M., and Mrs., Chicago.
Monfert, J. W., Alva, Okla.
Morrisson, Jas. W., Chicago.
Mrazek, L. L., Chicago.
Muhlhan, Otto E., Cleveland, O.
Newcomb, E. L., Minneapolis, Minn.
Newton, Howard C., Omaha, Nebr.
Noel, H. S., Indianapolis, Ind.
O'Neill, William, Chicago.
Ormes, A. E., Chicago, Ill.
Ostrofsky, Frank J., Bridgeport, Conn.
Peacock, J. C., and Mrs. and Miss M. A., Philadelphia, Pa.
Pepin, L. A., Chicago, Ill.
Peterson, Arthur F., Brainerd, Minn.
Pierce, Fred D., Barton, Vt.
Pittenger, Paul S., Philadelphia, Pa.
Porterfield, W. P., Fargo, N. D.
Potts, T. H., and Mrs., Chicago.
Powell, Wm. C., Snowhill, Md.
Pritchard, M. H., Dr., Chicago.
Puckner, W. A., Chicago, Ill.
Quales, Iver L., Chicago.
Quinn, Miss Ada, Chicago.
Raeuber, E. G., Milwaukee, Wis.
Rauschert, H., Mrs., Chicago.
Rehfuss, Jacob, Brooklyn, N. Y.
Rhode, R. E., Chicago.
Richtmann, W. O., Madison, Wis.
Riemenschneider, J. H., and Mrs., Chicago.
Rietzke, H. W., St. Paul, Minn.
Rogers, Chas. H., Minneapolis, Minn.
Rudd, Wortley F., Richmond, Va.
Rudder, Wm. H., Salem, Ind.
Ruenzel, H. G., Milwaukee, Wis.
Rusby, H. H., Newark, N. J.
Sass, S. K., Chicago.
Sayre, L. E., Lawrence, Kans.
Schachleiter, Frank, Arkansas.
Schaefer, Hugo H., New York City.
Schafer, Geo. H., and Mrs., Fort Madison, Ia.
Scherer, Andrew, Chicago.
Schlichting, A. F., Fargo, N. D.
Schlick, S. F., Joliet, Ill.
Schmid, Louis A., and Mrs., Chicago.
Schmidt, Fred M., Chicago.
Schmidt, A. Elsa, Peoria, Ill.
Schrage, Frank, Chicago, Ill.
Schreiner, Mrs. A., Batavia, Ill.
Scoville, Wilbur L., and Miss Ruth, Detroit, Mich.
Seibert, D. P., and Mrs. and Miss Madeline, Chicago.
Seltzer, Leonard S., Detroit, Mich.
Selzer, Eugene R., Cleveland, O.
Shapiro, Leo A., Chicago.
Sheely, Edw. V., Memphis, Tenn.
Sisson, O. U., and Mrs., Chicago.
Skye, F. J., St. Louis, Mo.
Snow, Clyde M., and Mrs., Chicago.
Snow, S. E., Mrs., Chicago.

Snyder, Geo. F., Detroit, Mich.
Snyder, J. P., Norwich, N. Y.
Sohrbeck, G. Henry, Moline, Ill.
Sparks, Edgar R., Burlington, N. J.
Spease, Edward, Cleveland, O.
Stephens, J. A., Chicago.
Stewart, F. E., Philadelphia, Pa.
Stinson, and Misses, Charlotte and Kate, Chicago, Ill.
Stocking, C. H., Indianapolis, Ind.
Storer, Chas. A., Chicago.
Storer, Chas. A., Mrs., Chicago.
Stouffer, Helen E., Leetonia, Ohio.
Stroup, Freeman R., Philadelphia, Pa.
Sturmer, J. W., Philadelphia, Pa.
Sudro, W. F., Fargo, N. Dakota.
Sultan, Fred W., St. Louis, Mo.
Sweetapple, H., Chicago, Ill.
Teeters, W. J., Iowa City, Ia.
Terry, Robert W., Columbus, O.
Thatcher, Edw. S., and Mrs., Milwaukee, Wis.
Thiesing, E. H., Cincinnati, O.
Thompson, Harry L., Lincoln, Nebr.
Thurston, Azor, Columbus, O.
Topf, J. A., and Mrs., Chicago.
Tupper, E. A., Minneapolis, Minn.
Umenhofer, A., Chicago.
Utt, Alfred R., and Mrs., Glen Ellyn, Ill.
Vaupell, Geo. F., Chicago.
Vilas, Fred L., Pierre, S. D.
Voge, Richard, Chicago.
Von Herman, E., Chicago.
Von Herman, F., Chicago.
Wakeman, Nellie, Madison, Wis.
Walgreen, C. R., and Mrs., Chicago.
Warner, Carl A., and Mrs., Chicago.
Weireter, J., Mrs., Chicago.
Wells, James H., and Mrs., Chicago.
Westbrook, C. G., Newbern, Tenn.
Weyrauch, James A., and Mrs., Chicago.
Weyrauch, J., Chicago.
Whelpley, H. M., and Mrs., St. Louis, Mo.
Whidden, R. A., and Mrs., Chicago.
Whitehouse, Harry, Johnson City, Tenn.
White, Harry A., Jr., Wyoming, Ill.
White, Hobart C., Chita, Pa.
Williams, Maude G., Miss, Chicago.
Williams, S. H., and Mrs., Chicago.
Wimmer, Curt P., New York City.
Windolph, J. Fred, Norwich, N. Y.
Woodhams, E. L., Kalamazoo, Mich.
Woodruff, Chas. M., Detroit, Mich.
Woodworth, F. K., Chicago.
Wuest, W. L., Cincinnati, Ohio.
Wulling, Frederick J., Minneapolis, Minn.
Zehner, G. O., New York City.
Zeigler, W. H., Charleston, S. C.
Zembsch, Lawrence, U. S. N., Great Lakes, Ill.
Zoeller, Geo., and Mrs., Chicago.
Zwick, Mary, Chicago.

OFFICERS OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

The new officers and committeemen elected by the National Association of Board of Pharmacy are: *President*, John Culley, of Utah; *Vice-Presidents*, H. G. Ruenzel, of Wisconsin; E. V. Sheely, of Tennessee; and Edward Dorsey, of Kansas; *Secretary*, H. C. Christensen, of Illinois; *Treasurer*, C. H. Skinner, of Vermont; *Executive Committee*, H. E. Purdy, of Connecticut; W. R. Jarrett, of Oklahoma, and Charles Gietner, of Missouri; *Advisory Examination Committee*, H. C. Christensen, Burton Cassady, of Indiana, and Charles Falkenhainer, of Iowa; new member of Syllabus Committee, George W. McDuff, of Louisiana.

THE MEETING OF THE NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

The National Association of Retail Druggists convenes in New Orleans this week. Any one acquainted with the hospitalities of the host city and its many attractions will know that the reception of the members will be warm and the entertainments many and interesting. The essence of association meetings this year is work and the plans have been laid accordingly. We express the hope for a satisfactory attendance.

THE NATIONAL PHARMACEUTICAL SERVICE ASSOCIATION.

Secretary E. Fullerton Cook, 145 N. 10th St., Philadelphia, has sent out a letter urging coöperation in securing the passage of the Edmonds Bill. Of particular value are personal letters to Congressmen from medical men and the laity. Signature lists endorsing the proposition are helpful and these can be readily secured if the purpose is explained. Literature and petition blanks can be obtained from Secretary Cook.

The communication reads in part:

"Throughout the entire United States and the world, physicians in private practice have, and are, depending upon the services of trained pharmacists in their administrations to the

sick, and in every European country, where army organization on a large scale has been the study of years, this same coöperation between the physician and pharmacist has been made a feature of the Medical Corps. The men in our army need this complete organization for the best medical treatment, army physicians need the help of pharmacists in the buying, preparing, standardizing, and dispensing of the potent remedies used in the treatment of the sick and wounded, the United States Government has had need, and has been using, trained pharmacists since the beginning of the war, in the buying, standardizing, and manufacturing of these same remedies, and the United States Navy has for many years recognized the necessity for the service of a trained officer, who embraces those qualifications contemplated for the Army by the Edmonds Bill."

FOURTH INTERNATIONAL EXPOSITION OF CHEMICAL INDUSTRIES.

Rich G. Hollaman, president of the International Exposition Company, has been notified from Washington that in the event of Grand Central Palace, New York City, being taken over by the Government for war purposes, this action will not in any way interfere with the holding of the Fourth National Exposition of Chemical Industries, scheduled to be held in that building September 23–30. That portion of the building required for the exposition will positively not be taken over by the Government until October 1st or later.

THE PHARMACIST AND THE LAW.

THE SALE OF ALCOHOL, DISTILLED LIQUORS, ETC., BY RETAIL DRUGGISTS.

In reply to a letter from this office to the Internal Revenue Service, at Philadelphia, we have received the following information:

1. To sell alcohol as such or beverage alcohol the alcohol must have been distilled prior to September 8, 1917, and the retail druggists must have a license for such sales.

2. To sell non-beverage alcohol the alcohol must be medicated according to one of the eleven formulas prescribed at the time of sale in a quantity not exceeding one pint. For such sales the retail druggists need not have a license, but they must first file a bond with the Revenue Office for the sale of such non-beverage alcohol, medicated according to the prescribed formulas, before making such sales. This bond must be in an amount proportionate to the number of gallons in the druggist's possession at any one time.

The rule set forth in T. D. 2717 prescribes that only the sales of malt extracts containing more than 2 percent alcohol or less than 12 percent solid matter are liable for the payment of special tax. These percentages refer only to malt liquors and not to spirits or wines.

Retail druggists need not pay a special tax of the retail liquor dealer to fill prescriptions containing whisky or brandy unless the said prescriptions are unmixed or unmedicated and fit for beverage purposes.

AMENDMENT TO HARRISON LAW IS PROPOSED BY CONGRESSMAN H. T. RAINEY, OF ILLINOIS.

In presenting amendments to the Harrison Law, Congressman Rainey stated that in the first draft there were 80,000 drug addicts, and that there were 8,800 addicts in New York City. In his further remarks he said that he had the names of 25 physicians, commissioned as captains and majors in the Army who are confirmed addicts; one of them was recently discovered with 50 ounces of opium before starting for France.

Congressman Rainey's bill provides the following:

For the registration of every person who imports, manufactures, produces, compounds, sells, deals in, dispenses or gives away opium, coca leaves or any compound, manufacture of derivative thereof.

That each person so registering shall pay special taxes ranging from $3 a year for physicians, surgeons, dentists and veterinarians, to $24 a year for importers, manufacturers, producers or compounders, with wholesale dealers taxed $12 and retail dealers $6 per annum.

That an internal revenue tax of 1 cent an ounce or fraction thereof shall be levied upon all such narcotics manufactured in or imported into this country, to be paid by the importer or manufacturer, such tax to be represented by stamps affixed to each package or container. Such tax to be in addition to any import duty.

That violations of the provisions of the act shall be punished by fine or imprisonment, or both.

The draft of the bill provides for the exception of drugs, dispensed by physicians, etc., when exact and definite regulation as to records and other specified data is observed.

At the time of this writing we are not advised relative to the extent of coöperation by pharmacists in constructing the Rainey amendment, or rather of a request for cooperation in preparing it. More frequently than ever before pharmacists are ignored in formulating enactments that largely concern them, contrary to the recommendation of President Wilson relative to seeking the advice of trades and professions that are directly interested in legislation under consideration.

We are not in position to controvert the assertions made by Congressman Rainey relative to the extent of drug addiction discovered by the draft. The statements relative to large quantities of paregoric and other related preparations may not be found so excessive when comparison is made with the number of persons involved. But the point is, pharmacists are most desirous of checking the narcotic evil; the American Pharmaceutical Association was largely instrumental in urging earlier legislation. There are undesirables in every trade and profession even, as Mr. Rainey indicates, among medical men and, as substantiated by court records. It would seem that physicians who lend themselves to such nefarious practice have just as great an opportunity for illegal dispensing and prescribing under the proposed regulations as under the Harrison Law. They would pay a license of $3.00, and be under less surveilance than pharmacists who are taxed $6.00 if not $30.00.

We are, at this writing, not prepared to give further expression but believe no hasty action should be taken and that Congressmen be importuned for further hearing and give a careful study to the provisions. To that end we advise that druggists everywhere urge delay of the legislation which for some reason is to be pushed through Congress. If then it proves a more effective means for checking traffic and prescribing well, and good. Only recently the confusion which resulted from alcohol legislation evidenced the lack of consultation with those who were qualified to give advice. The Drug Trade Conference should have the opportunity to confer with the promoters relative to this legislation.

CHANGES OF ADDRESS.

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of the change of address is received before shipment or mailing.

Both the old and the new address should be given thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.

CHANGE OF ADDRESS SINCE JULY 1, 1918.

FONTEYNE, LT. G.,
From Bedford, Mass.
To Sanitary Corps U. S. General Hospital, New Haven, Conn.

HALL, WM. A.,
From 200 Griswold St., Detroit, Mich.
To 156 Ferry West, Detroit, Mich.

BRYSON, W. S.,
From Woodlawn, Pa.
To New Sheffield, Pa.

HEIDENREICH, A. C.,
From c/o Olsen's Drug Store, Des Moines, Iowa.
To Apt. 306 Boekenhoff, 12th and High Sts., Des Moines, Iowa.

BANDTEL, C. M.,
From 1072 27th St., Oakland, Cal.
To R. F. D. No. 1, Redwood Heights Farm, Santa Cruz, Cal.

DEWEY, A. H.,
From North Pacific College, Portland, Ore.
To 1175 East 27th St., North Portland, Ore.

JOHNSON, LT. E. G.,
From Tonkawa, Okla.
To Ft. Puget Sound, C. A. N. A., Washington.

SCHWARTZ, ISRAEL,
From 503 E. 7th St., Brooklyn, N. Y.
To Bendiner & Schlesinger, New York, N. Y.

WAGNER, L. R.,
From 203 N. Ingalls St., Ann Arbor, Mich.
To 905 South State St., Ann Arbor, Mich.

PATTERSON, ANNIE M.,
From 631 Euclid Ave., Baltimore, Md.
To 2900 West Lake Place., Denver, Col.

HRON, R. P.,
From 707 East Mansur Ave., Guthrie, Okla.
To 602 North Elm St., Guthrie, Okla.

HOFF, K. W.,
From c/o Eli Lilly & Co., Indianapolis, Ind.
To 837 North Delmar St., Indianapolis, Ind.

BERCOU, J. D.,
From 917 South 14th Ave., Minneapolis, Minn.
To 937 South 14th St., Minneapolis, Minn.

DELGADE, DR. ESTRELLE,
From Principe 19, Havana, Cuba.
To San Nicholas 245, Havana, Cuba.

PENDLETON, C. I.,
From 87 Gardner St., Allston, Mass.
To 1301 Broadway, Oakland, Cal.

TAYLOR, WM.,
From 515 West 157th St., New York, N. Y.
To 2355 Valentine St., Bronx, New York, N. Y.

RHODEHAMEL, H. W.,
From 643 East 32nd St., Indianapolis, Ind.
To 638 East 48th St., Indianapolis, Ind.

MARIANOWSKY, J.,
From 310 South 4th St., Brooklyn, N. Y.
To 1233 Flatbush Ave., Brooklyn, N. Y.

COLE, J. N.,
From 542 Presidio Ave., San Francisco, Cal.
To U. S. A. Ambulance Service, Camp Crane, Allentown, Pa.

DEAN, J. ATLEE,
From 5420 Baltimore Ave., Philadelphia, Pa.
To 614 South 48th St., Philadelphia, Pa.

GLISSMAN, HUGO R.,
From c/o Olsen's Pharmacy, Des Moines, Iowa.
To Doon, Iowa.

FULLER, OLIVER F.,
From 310 West Washington St., Chicago, Ill.
To 540 West Randolph St., Chicago, Ill.

CHANGE OF NAME.

LEROW, H. M., to LEROU, H. M.,
289 Main St., Norwich, Conn.

DECEASED.

BOYD, HUGO L.,
Kosciusko, Miss.

MORRIS, MAX,
Macon, Ga.

SHULMYER, CHAS. J.,
Providence, R. I.

TIMMONS, GEO. D.,
Valparaiso, Ind.

RESIDENCE UNKNOWN.

HENSGE, WM.,
10516 Wilbur Ave., Cleveland, Ohio.

MORGAN, R. W.,
219 North Senate Ave., Indianapolis, Ind.

EICHER, B. L.,
73 East 12th St., Chicago, Ill.

GRAHAM, JOHN R.,
Ohio Valley Hospital, Wheeling, W. Va.

GRANT, JOHN H.,
Jellico, Tenn.

BRITISH PHARMACEUTICAL CONFERENCE.

At the fifty-fifth annual meeting of the British Pharmaceutical Conference the following officers were elected: President, Mr. W. Kirby; vice-presidents, Mr. W. L. Currie, Mr. W. P. Evans, Mr. J. Mitchie, Mr. Edmund White, Mr. G. Whitfield and Lieutenant Colonel E. F. Harrison; treasurer, Mr. D. Lloyd Howard; honorable general secretaries, Captain H. Finnemore and Mr. R. R. Bennett; members of executive, Mr. F. W. Crossley Holland, Mr. A. Deane, Mr. F. W. Gamble, Mr. C. H. Hampshire, Mr. A. R. Melhuish, Mr. H. Skinner, Mr. T. Stephenson, Mr. H. Wyatt, and Professor H. L. Smith; honorable auditors, Mr. W. F. Gulliver and Mr. W. L. Howie.

JOURNAL ANNOUNCEMENTS.

Subscriptions: Annual subscriptions in advance, including postage: United States and Mexico, $4.00; Canada, $4.35; foreign countries, $4.50. Single copies, 35 cents. Remittance should be made payable to Treasurer H. M. Whelpley but mailed to JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION 211 Church St., Easton, Pa., or 253 Bourse Building, Philadelphia, Pa. Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers.

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Membership: Applications for membership in the American Pharmaceutical Association may be made of any of the officials. The annual payment of five dollars covers the annual dues and subscription to the JOURNAL. Members receive, also, the publications of the Association that are distributed free of charge.

Further information will gladly be furnished by any of the officers of the Association and members.

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